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SALTWATER ECOLOGY AND ECONOMICS ON THE HALF-SHELL:

COMPARING GEORGIA'S NEW OYSTER LAW TO ITS SOUTHEASTERN NEIGHBORS

Hunt Revell[*]

Georgia oysters have both a historic pedigree and a bright future. The salt marsh ecosystem Georgia's wild oysters inhabit and the booming market awaiting Georgia's farmed oysters each stand to benefit from the State's 2019-2020 oyster law and regulations. This new legal framework provides for leasing and permitting of floating cages in public trust waters, and the potential for sustainable ecological and economic growth for coastal resiliency. These developments should allow Georgia to enter the national and international market for farmed oysters, alongside neighboring states and others on the Eastern Seaboard, Gulf Coast, and Pacific Northwest. By analyzing the history and structure of the new law, this article provides an in-depth analysis of how Georgia might establish its oyster farming industry, with an eye toward the benefits of protecting, preserving, and restoring the wild natural oyster resource. By comparing Georgia's approach to

[*] Hunt Revell is a Georgia Sea Grant Legal Fellow at the University of Georgia's Carl Vinson Institute of Government and a recent graduate of Georgia State University College of Law. Prior to attending law school, Hunt managed Athens' Seabear Oyster Bar where he remains a partner and served as an environmental education associate for the Governor's Island Alliance and New York Harbor School. He holds two interdisciplinary degrees: a master's degree in Liberal Studies from the New School for Social Research in New York and a bachelor's degree in Political and Social Thought from the University of Georgia's Honors Program. This article is based on research conducted for the Georgia Sea Grant Law Program at the University of Georgia. The statements, findings, conclusions, and recommendations are those of the author and do not necessarily reflect the views of Georgia Sea Grant, the Carl Vinson Institute of Government, or Georgia State University College of Law. This article is part of continuing research into the State of Georgia's oyster mariculture program and strategic plans for economic and environmental resiliency in coastal Georgia. The author would like to thank Shana Jones, public service faculty at the Carl Vinson Institute of Government, for this opportunity and her wise guidance on the project, as well Katie Sheehan Hill, research associate at the Carl Vinson Institute of Government, for her continued conversation and support around this work. The author would also like to thank John Marshall, faculty at Georgia State University College of Law, for his incredible support on this paper and the author's journey toward becoming a lawyer.

that of its "core corner four" neighbors—South Carolina, North Carolina, Florida, and Alabama—this article outlines the considerations and context used by other states developing oyster "mariculture" programs. By identifying the potential for the Georgia oyster farming industry to not only serve a growing market but also to strengthen coastal resiliency, this article also highlights the ecological benefits of oysters and the State's Coastal Marshlands Protection Act. Last, the article provides an Appendix with a short legal memorandum analyzing constitutional law issues related to residency requirements and contains several tables comparing state mariculture programs.

Key Words: Oysters**,** Aquaculture**,** Public Trust**,** Resilience

I. Introduction and Overview

In the spring of 2019, Georgia Governor Brian Kemp signed House Bill 501 into law, establishing the legal framework for commercial oyster farming in Georgia's coastal waters.[1] Until that point, Georgia law only allowed leasing state-owned "intertidal" waters to harvest *wild* oysters. Oyster *farming*, referred to in the law as "mariculture," utilizes on-bottom bags and cages in shallow waters and off-bottom floating equipment in deeper, "subtidal" waters to grow single oysters for half-shell consumption.[2] In Georgia, as in many states, the framework for leasing "water bottom" property and the specific permits that describe how that property may be used remains entwined with common law concepts and rights such as "crown grants" and the public trust doctrine.[3] Likewise, Georgia's new framework may face complaints from citizens claiming conflicting uses of the public waters, threatened "riparian viewsheds," and structural problems related to growth and viability in the industry, though the law and corresponding rules and regulations also preemptively address some of these issues.[4] Last, oyster *farming* will likely have its own ecological benefits related to the protection of the State's *wild* oyster resource, and these benefits, acknowledged by the law, create new opportunities for enhancing economic and environmental resilience in coastal Georgia.

This paper provides context and analysis related to Georgia's new oyster law. The first section includes a historical and legal overview of the oyster industry in Georgia. The second section reconstructs a brief legislative history of the new law. Third, the paper takes a deep dive into the law's text and accompanying regulations. The fourth section expands this analysis to include the laws and regulations of the "core corner four" states most likely to have a continuing influence on Georgia's framework: Florida, Alabama, South Carolina, and North Carolina. After a brief conclusion, the paper also includes an appendix in the form of a legal memorandum analyzing constitutional concerns raised by the recent changes and historically related to oyster law in the United States.

II. From Wild Bed to Farmed Crop: An Overview of the Changing Georgia Oyster

Since the American Revolution, the right to harvest oysters in Georgia was traditionally tied to property ownership in "intertidal" water bottoms also known as

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[1] 2019 GA. LAWS 217 (codified at GA. CODE ANN. § 27-4-187 *et seq*.).

[2] *Id*.

[3] See Danielle Goshen, Growing Oysters in Georgia: An Overview of the Legal Framework in Overcoming Obstacles to Shellfish Aquaculture through Legal Research and Outreach: Case Studies 78, (Nat'l Sea Grant L. Ctr., 2019), http://nsglc.olemiss.edu/projects/shellfish-aquaculture/files/casestudies.pdf.

[4] Id. at 6 n.22.

the foreshore—the land underneath the water located between the highest and lowest marks of the tide where oyster beds thrive. One way to show this property ownership on the Eastern Seaboard was through a "crown grant" or a chain of title linked directly to an English monarch.[5] Other than land contained in such a grant, the state of Georgia owns the submerged lands underlying traditionally navigable waters.[6] Waterfront property owners, however, were given the rights to harvest oysters from wild oyster beds in order to promote the oyster industry.[7] For other citizens to harvest wild oysters from these areas, the citizens had to obtain a lease from the state.[8] By the early 20th century, this framework helped Georgia lead the nation in oyster harvesting through its robust oyster canning industry,[9] especially as many oyster beds along the Eastern Seaboard died out due to overfishing, industrialization, and resource mismanagement. While some scholars have argued that Georgia's wild oyster population took a similar turn,[10] others point to socio-economic factors related to the canning industry and claim Georgia's wild oyster resource has proven remarkably resilient.[11]

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[5] *See* Johnson v. State, 40 S.E. 807, 807-08 (Ga. 1902) (noting that "At common law, in the absence of any special title by grant or prescription, the boundary of landowners abutting on the sea, or upon any estuary, tidal stream, or arm of the sea where there was a regular rise and fall of the tide, extended only to high-water mark," and that "the soil between high-water mark and low-water mark was the property of the crown" and could only be conveyed by a monarch).

[6] GA. CODE ANN. § 52-1-2 (1992) ("The State of Georgia continues to hold title to the beds of all tidewaters within the state except where title in a private party can be traced to a valid Crown or state grant which explicitly conveyed the beds of such tidewaters"); *see also* Black v. Floyd, 630 S.E.2d 382 (Ga. 2006) (reaffirming that Georgia owns the beds of tidewaters)); *and* NAT'L SEA GRANT L. CTR., INVENTORY OF SHELLFISH RESTORATION PERMITTING & PROGRAMS IN THE COASTAL STATES 50 (2014), http://masglp.olemiss.edu/projects/files/tnc-report.pdf.

[7] State v. Ashmore, 224 S.E.2d 334, 341 (Ga. 1976) (finding previous 1902 statute did not give title of foreshore to adjacent landowners because that title vested in the state of Georgia; reasoning, however, that the state could lease or give "rights" to the foreshore to adjacent landowners if it chose to do so, which Georgia's 1902 statute did in response to the *Johnson* decision that deterred oyster industry growth).

[8] *Compare* GA. CODE ANN. § 52-1-2 (1992) (codifying English crown grant and common law public trust doctrines), *with* GA. CODE ANN. § 27-4-198(a-c) (1991) (providing for wild harvesting of oysters under Georgia law).

[9] Mary Landers, *Georgia perfects the lonely oyster*, BLUFFTON TODAY (Jan. 20, 2016, 11:22 PM), https://www.blufftontoday.com/latest-news/2016-01-20/georgia-perfects-lonely-oyster.

[10] *See, e.g.*, C. DUANE HARRIS, GA. DEP'T OF NAT. RES., SURVEY OF THE INTERTIDAL AND SUBTIDAL RESOURCES OF THE GEORGIA COAST 10 (1980) (noting that wild harvest oyster landings have often fluctuated widely year-to-year in Georgia but arguing that various factors, including failure to "reseed" coastal waters with cured oyster shell, disease, pollution, lack of shellfish sanitation, riparian rights, closing of harvesting waters, and labor problems each contributed to lower oyster harvests and a depleted oyster resource).

[11] Power et al., *A Caution Against Interpreting and Quantifying Oyster Habitat Loss From Historical Surveys, 29* J. OF SHELLFISH RSCH. 927–36 (2010) (finding oysters reach their greatest density and biomass in southeastern tidal creeks and sounds, where intertidal oysters may even be more resistant to or tolerant of disease and pollution due to physiological adaptation to survive extreme temperatures during low tide exposure, reasoning declining trends in fishery landings reflected the social and economic challenges associated with an unsustainable canning industry during the early 20th century), http://www.oyster-restoration.org/wp-content/uploads/2012/06/Harris-1980.pdf.

Oyster farming provides a potential opportunity to revitalize the oyster industry with a grown crop rather than a wild resource. Farmed oysters may not be as susceptible to the problems that depleted the wild beds along the Eastern Seaboard, and they may also provide a more sustainable industry than cannery row. The leasing and permitting rights traditionally involved in wild harvesting, however, required reconfiguring to accomplish these goals. While the state of Georgia owns all submerged lands below the ordinary high-water mark and the foreshore underlying navigable tidal waters, these lands are held in public trust, so the State regulates coastal activities in these areas. This public trust doctrine is codified in many states, including Georgia.[12] In addition to public trust doctrine, the new law and regulations statutorily require the State to consider other public uses, such as: (1) pre-existing uses of the waterway, including historical, economic, recreational, and private uses such as fishing, boating, "riparian viewsheds, and research sites;" (2) "areas where property owners may exercise riparian rights[13] to construct docks or marinas," including areas where Georgia's Coastal Marshlands Protection Act applies; and (3) "dynamic shorelines and shoaling."[14]

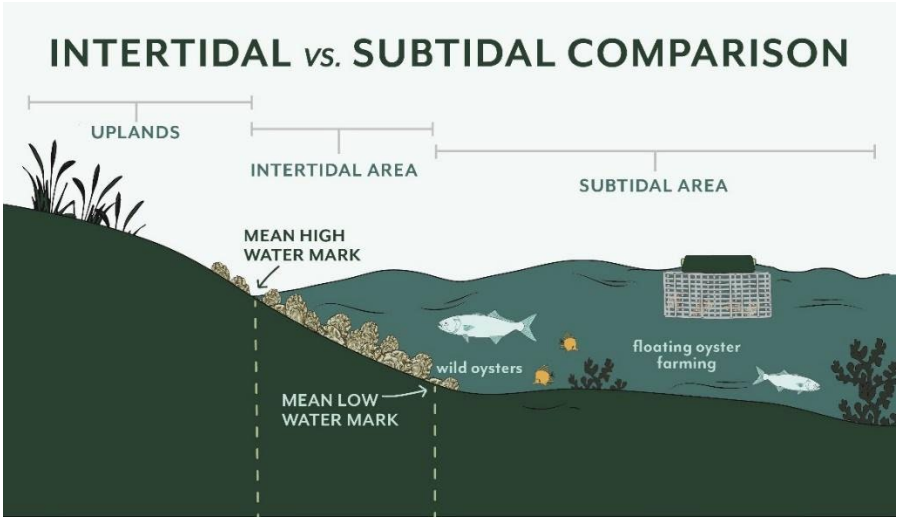

Figure 1: Intertidal and Subtidal Comparison. Image courtesy of University of Georgia Carl Vinson Institute of Government.

Georgia's new law also creates a new leasing system for "subtidal water bottoms" below the low tide mark where oysters are entirely submerged by water. This area is exclusively for oyster farming and even sited away from natural shellfish beds. These areas are deep enough to allow oyster farmers to grow oysters in modern floating equipment that is an essential component of the industry, but

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[12] *See* Robin K. Craig, *A Comparative Guide to the Eastern Public Trust Doctrine*, 16 PA. STATE ENV'T L. REV. 1, 26 (2007).

[13] Riparian rights are traditional appurtenant rights that attach to waterfront property by virtue of that property touching the shoreline. They include access to the water, access to property from the water, the right to use the water, a relatively unobstructed view of the water, and in some cases the right to build dock facilities. *Id.* at 4, 25.

[14] See GA. COMP. R. & REGS. 391-2-4-.18(6)(e) (2020), and Ga. Code. Ann. § 12-5-281 (1992).

this same equipment also has the potential to create conflicts with other users of the state's public trust waters. Other Eastern Seaboard states have already dealt with lawsuits and other challenges involving these conflicting uses,[15] and Georgia's law reflects an attempt to alleviate potential conflicts by retaining discretion in its Department of Natural Resources (DNR) Coastal Resources Division (CRD) to appropriately site and distribute oyster leases in approved growing areas, specifically for oyster farming.[16]

One additional consideration in Georgia's changing oyster law is the ecological value of a commercial oyster farming industry. Georgia's mere one hundred miles of coast contains approximately one-third of all the salt marshes on the Eastern Seaboard.[17] Salt marshes are some of the most biologically productive systems on earth, making Georgia's coast an ideal place for producing oysters.[18] Oyster farming in Georgia might not only revitalize the industry—it is also quite likely to create cleaner waterways because oysters are filter feeders that improve water quality and clarity simply by being alive.[19] Farming oysters puts more oysters in the water and relieves pressure on the wild oyster resource, allowing it to provide its natural ecological functions.[20] Oyster farmers may also serve as environmental stewards because the quality of their crop depends upon the water being clean.[21] Oysters can clean excess nitrogen from urban runoff and waste-water treatment facilities, as well as the oil, PCBs, and heavy metals from industrial runoff.[22] Oysters, a keystone species, have even been called "ecosystem engineers" because their beds and reefs provide habitat for other plants and animals and protect

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[15] *See e.g.*, Krekorian v. Zoning Bd. of Rev. of the Town of South Kingston, No. WC-2016-0464, 2019 WL 7374049 (R.I. Super. Ct. Dec. 26, 2019) (affirming the zoning board's determination that oyster farming qualified as a permissible "livestock farming" use, that activities such as the sorting of oysters on a dock were part of the oyster farming process, and that the onsite parking by employees of the oyster farm was a permitted accessory use).

[16] *See Commercial Shellfish Harvest*, GA. DEP'T OF NAT. RES., https://coastalgadnr.org/commercialshellfishharvest (last visited Mar. 12, 2021).

[17] *Salt Marsh Ecology*, UNIV. OF GA. MARINE EXTENSION SERV. & GA. SEA GRANT, https://gacoast.uga.edu/about/georgia-coast/salt-marsh-ecology/ (last visited Feb. 12, 2021).

[18] Charles Seabrook, *Tidal Marshes,* NEW GA. ENCYCLOPEDIA (Oct. 13, 2006) https://www.georgiaencyclopedia.org/articles/geography-environment/tidal-marshes.

[19] Thomas Bliss and Randal Walker, *Reducing the Minimal-Legal Harvest Size of Oysters in Georgia, in* 14 OCCASIONAL PAPERS OF THE UNIV. OF GA. MARINE EXTENSION SERV. (2012), http://www.oyster-restoration.org/wp-content/uploads/2012/06/Occasional_Paper_Vol._14_Miniminal_harvest_size_of_Oysters.pdf; *see also* Billion Oyster Project, https://www.billionoysterproject.org (last visited Apr. 12, 2021) (demonstrating that oysters remain inedible because of decades of pollution brought on by the Industrial Revolution, but identifying impressive efforts utilizing oysters to clean New York Harbor).

[20] *Id*.

[21] Jennifer Greenhill-Taylor, *Florida Oysters: Bringing briny Florida Oysters to the table year-round*, EDIBLE ORLANDO (Jan. 2, 2020), https://www.edibleorlando.com/florida-oysters/; Allston McCrady, *Romancing the Oyster*, THE LOCAL PALATE (Feb. 3, 2020), https://thelocalpalate.com/articles/romancing-the-oyster/.

[22] *Can Oysters Solve the Nitrogen Problem?*, R.I. SEA GRANT (May 8, 2019), https://seagrant.gso.uri.edu/can-oysters-solve-the-nitrogen-problem/.

coastlines from hurricanes, heavy wave energy, storm surges, and erosion.[23] Live oysters and even discarded oysters shells can be used to create "living shorelines" or "breakwaters" to rebuild, recreate, and maintain cleaner coastal waters.[24] Nutritional benefits also exist—oysters are an ancient food source high in protein and zinc that arguably form a sustainable component of a vegan diet.[25] These many and varied advantages are part and parcel of what Georgia's new law enlivens.

III. How the Shell Gets Made: A Brief Legislative History of Georgia's Oyster Law

Georgia's mariculture law emerged from the 2019-2020 Regular Session of the General Assembly, Georgia's bicameral legislative branch.[26] The General Assembly typically convenes on the second Monday of each January for a forty-day session, though the actual session usually involves at least sixty calendar days and ends sometime in March due to formal recesses and adjournments.[27] Bills and resolutions are commonly introduced and sponsored by members of one or both chambers.[28] Assembly members with legislative ideas meet with the Office of Legislative Council where these ideas are drafted into bills or resolutions, which then can proceed to committees, and if they succeed in committee, to a vote on the floor of the House or Senate.[29]

During the 2019-2020 Regular Session, House Bill 501 (HB 501) was co-sponsored by seven members of the Georgia General Assembly: Jesse Petrea (R-Savannah, Chairman for Human Relations and Aging), Don Hogan (R-St. Simons Island, Chairman for Information and Audits), Ron Stephens (R-Savannah, Chairman for Economic Development and Tourism), Al Williams (D-Midway), Steven Sainz (R-Woodbine), Carl Gilliard (D-Savannah), and William Ligon, Jr. (R-Brunswick, Senate sponsor).[30] The bill passed through committee in the House Game, Fish, and Parks Committee, and the Senate Natural Resources and

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[23] Billion Oyster Project, *supra* note 17.

[24] *Id.*; *see also Living Shorelines*, UNIV. OF GA. MARINE EXTENSION SERV. & GA. SEA GRANT, https://gacoast.uga.edu/research/major-projects/living-shoreline/ (last Visited April 27, 2021).

[25] Bob Granleese, *Are oysters vegan?* THE GUARDIAN (Sept. 27, 2019 7:00 AM), https://www.theguardian.com/food/2019/sep/27/are-oysters-vegan-kitchen-aide; Christopher Cox, *Consider the oyster,* SLATE (Apr. 07, 2010 6:55 AM), https://slate.com/human-interest/2010/04/it-s-ok-for-vegans-to-eat-oysters.html (noting that renowned ethicist Peter Singer first allowed oyster-eating in *Animal Liberation*, the "best-argued case for a vegan diet," because of the lack of a central nervous system in bivalves and the ability to produce oysters sustainably through farming).

[26] *See generally* REID W. HARRIS, AND THE COASTLANDS WAIT: HOW THE GRASSROOTS BATTLE TO SAVE GEORGIA'S MARSHLANDS WAS FOUGHT—AND WON (2020) (containing a succinct overview of Georgia's legislative process, as well as the passing of the Coastal Marshlands Protection Act).

[27] *Id*.

[28] *Id.*

[29] *Id*.

[30] 2019 GA. LAWS 217 (codified at GA. CODE ANN. § 27-4-187 *et seq*.).

Environment Committee.[31] The bill passed 102-60 in the House in March 2019 and 35-19 two weeks later in the Senate.[32] While the bill received solid support, House and Senate Democrats voted against it almost in block, probably for political reasons or perhaps a perception of negative environmental impacts, though public health was likely not a concern for the detractors.[33] Notably, the key Democratic defectors from this block were either bill co-sponsors, from coastal areas, or both. Governor Brian Kemp signed the bill into law in May 2019.

HB 501, however, was not a done deal from the start, and it encountered a late bump in the road.[34] HB 501 had a predecessor that eventually became HB 565, which was the work product of former House member Jeff Jones (R-Brunswick).[35] Many bills that involve government agencies are often unofficially sponsored or supported by those agencies.[36] Accordingly, the text that became HB 565 was brought by Jeff Jones to DNR for discussion.[37] Later, however, the bill's text was significantly amended by the Office of Legislative Council without input from Jeff Jones.[38] Afterward, Jesse Petrea became the lead co-sponsor for the amended bill, and Jeff Jones was removed from what became the HB 501 legislation.[39] Jeff Jones, for his part, later introduced the original text of HB 565, hoping to have the bill discussed and amended in committee.[40]

While agricultural rules certainly play key roles in most state programs—for example, when oysters are landed and distributed—most states house their oyster aquaculture programs in Marine Resources, Natural Resources, or Fisheries and Wildlife Division.[41] While Georgia's oyster mariculture program could have been

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[31] *2019-2020 Regular Session HB 501 Game and fish; provide for mariculture development*, GA. GEN. ASSEMBLY, http://www.legis.ga.gov/legislation/en-US/Display/20192020/HB/501.

[32] *Id.*

[33] Telephone Interview with Confidential Source #2, (April 10, 2021). Some of the following legislative history is not a matter of public record, and it involves information obtained from sources who preferred to remain anonymous because of their continuing involvement with Georgia politics. This discussion may not represent the full range of perspectives on the passing of Georgia's oyster law, but at a minimum, it is a reasonable depiction of the events that took place during the 2019-2020 Regular Session. The interviews are specified by type and numbered in the order in which they occurred.

[34] Zoom Interview with Confidential Source #1, (Mar. 16, 2021).

[35] *Id.*

[36] *Id*.

[37] Telephone Interview with Confidential Source #3, (Apr. 30, 2021).

[38] *Id*.

[39] Jeff Jones signed a petition calling for Speaker of the House David Ralston to resign due to excessive use of the "legislative leave" law that allows for members to request stays on pending cases. When the Speaker did not resign, this action led to significant political fallout for members, like Jones, who opposed him. Further, while HB 501 involved an area that was arguably outside of Petrea's role as chair of the Human Relations and Aging Committee, Petrea is from coastal Georgia, a region the bill intended to benefit. Democrats in the General Assembly, however, at times vote in bloc against bills Petrea sponsors or supports, as a sort of informal protest against Petrea's perceived demeanor or power. *Id.*

[40] Confidential Source #3, *supra* note 37.

[41] Zoom Interview with Confidential Source #4, (Mar. 10, 2021)*;* Zoom Interview with Confidential Source #5, (Apr. 1, 2021).

housed in the Department of Agriculture (DOA), the fact that DNR was the agency co-sponsor for the bill and tapped to administer the oyster mariculture program is notable because Jeff Jones' HB 565 envisioned the program being housed in DOA not DNR.[42] Nonetheless, oyster aquaculture or mariculture can be reasonably understood as farming because oyster "seed" are spawned in hatcheries, raised from seed in nurseries, and tended in open water "grow-out" sites, much like using the sea as a field or garden. Georgia's DOA, however, did not pursue the bill.[43] If it had, its political power in Georgia strongly suggests that it is highly likely that had the DOA wanted to be in charge of oyster mariculture in Georgia, it would have been.[44]

HB 565 not only would have placed the new mariculture regulation with DOA, the now defunct bill also relied upon many of the previous aspects of Georgia's oyster law that will be discussed below, utilizing the existing public bidding system instead of HB 501's new lottery system for leases, allowing applicants to propose their own lease sites so long as they were in "approved growing areas," allowing year-round harvest subject to harvest time and water temperature regulations, as well as other environmental events such as "red tides," and requiring a clear and straightforward set of permits and certifications, primarily regarding shellfish sanitation from the DOA.[45] The bill even created a new statutory section rather than reworking the existing one, perhaps to further differentiate DNR's regulation of the *wild* oyster resource from DOA's potential regulation of *farmed* oysters. The bill was also shorter and more direct and appeared to substantially regulate the industry.[46]

While Jeff Jones and other advocates pursued HB 565, they also publicly encouraged Governor Kemp to veto HB 501.[47] Jones gathered letters of support from several key industry stakeholders opposing HB 501, including Sapelo Sea Farms, the largest clam-farming operation in Georgia, a veteran-owned group of oyster farmers called The Great Georgia Oyster Company, Atlanta's popular Kimball House restaurant specializing in farmed oysters, and Inland Seafood, the largest seafood distribution company in the southeast.[48] Sapelo Sea Farms, for example, claimed that "[HB 501 does] not take the industry to the level of production that is possible for Georgia to be a leader in oyster production, nor [does

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[42] 2019-2020 Regular Session HB 565*,* GA. GEN. ASSEMBLY, https://www.legis.ga.gov/legislation/55674 (last visited Apr. 27, 2021). As will be explored below, however, in several other key ways, HB 565 was also more consistent with other state programs.

[43] Confidential Source #3, *supra* note 37.

[44] Confidential Source #2, *supra* note 33.

[45] 2019-2020 Regular Session HB 565*, supra* note 37.

[46] *Id.*

[47] *Georgia Oyster Mariculture Industry Objects to HB 501/SB 182*, Vote Jeff Jones (Mar. 27, 2019), https://www.votejeffjones.com/georgia_oyster_mariculture_industry_objects_to_hb501_sb182.

[48] *Id*. Inland Seafood also claims it could currently purchase, sell, safely distribute over $1 million worth of Georgia-farmed oysters in the current market, anecdotal evidence of Inland's stake in the industry.

the bill] make shellfish any safer than they are now."[49] Similarly, The Great Georgia Oyster Company simply requested "the right kind of regulation . . . the right kind of relationship between regulators and industry.[50]

The contentious relationship between the bills and their sponsors ultimately erupted in a committee meeting, where Jesse Petrea presented the revised version of HB 501 and gained general support from the committee members, including Democratic Representative Williams from McIntosh County in coastal Georgia.[51] Jeff Jones also brought proponents to support HB 565, including oyster farmers from South Carolina—but notably no Georgia farmers—and the DOA Deputy Commissioner present at the meeting had not been informed of Jones' bill, which his agency would purportedly oversee.[52] While the meeting perhaps included some straight-talk, the political shortcomings of HB 565 made the bill an unlikely winner, even with industry and advocate support.[53] HB 501, whatever its strengths and weaknesses, won the day.

IV. The Shell is in the Details: Georgia's Statute and Regulations

HB 501 amended Article 4 Chapter 4 of Title 27 of the Georgia Code—the same statutes that previously governed the state's wild oyster industry.[54] While many parts of the law governing wild harvest remain in place, the incorporation of oyster farming led to both nominal and structural changes. The statute now begins by providing three policy findings: (1) "the wild harvest and mariculture of shellfish provide increased seafood production and long-term economic opportunities for coastal Georgia;" (2) the wild harvest and mariculture of shellfish provide "increased ecological benefits to the estuarine environment by promoting natural water filtration and increased fishery habitats;" and (3) "there exists a public health concern when consuming raw or undercooked shellfish, especially during warm water, summer conditions."[55] These findings inform the explicit purpose of the statute: "to encourage development of the commercial shellfish industry in ways that protect the public health and are compatible with the environment and with other public uses of the estuarine area, such as navigation, fishing, swimming, and other forms of recreation."[56] The law then authorizes the Board of Natural Resources to "promulgate rules and regulations necessary to develop and cultivate the shellfish industry in Georgia," requiring it "to take into account public health as the primary consideration" when doing so and to transmit recommended legislation "necessary to improve Georgia's mariculture industry."[57]

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[49] *Id.*
[50] *Id.*
[51] Confidential Source #1, *supra* note 34.
[52] Confidential Sources #1, *supra* note 34; Confidential Source #3, supra note 37.
[53] *Id.*
[54] 2019 GA. LAWS 217 (codified at Ga. Code Ann. § 27-4-187 et seq.).
[55] GA. CODE ANN. § 27-4-187 (2019).
[56] *Id.*
[57] GA. CODE ANN. § 27-4-189 (2019).

On March 1, 2020, DNR published its first regulations for "shellfish sanitation, seed importation, and water bottom lease terms."[58] The amended law and regulations function as a unit: they change terminology, alter permitting requirements, establish new subtidal water bottom leases, create an avenue for year-round harvesting without fully legalizing it, and confirm that leasing sites will be managed by CRD, though without providing many details.[59] The regulations separately adopt the National Shellfish Sanitation Program ("NSSP") Model Ordinance,[60] enumerate rules for seed hatchery certification and outline further details for the subtidal water bottom leases established in the amended statute.[61]

A. Words Matter: Changes in Terminology

In its definitions section and throughout its text, Georgia's amended law changed the vernacular around shellfish permitting. As noted above, the very title of the law providing for shellfish "mariculture"—the growing of shellfish in coastal waters—represents an informed decision to distance the law from perceived negative views of on-land or deep-sea aquaculture operations. Next, the basic permits and permit-holders are now referred to as "master harvesters" and "harvesters," rather than the longstanding "master collectors" and "pickers."[62] This change perhaps reflects the statute's new emphasis on farming and harvesting oysters from floating equipment, not just collecting oysters from wild beds. The statute also establishes previously undefined terms like "approved growing areas"—the only places where wild or farmed oysters can be harvested—in accordance with the NSSP.[63]

Another newly-defined but previously understood term is "culch," (or cultch) which is primarily discarded oyster, clam or other shellfish shells, when those shells originate from Georgia salt waters.[64] Historically, many state oyster laws—including Georgia's—required wild harvest permit holders to put shell back into the water in proportion to the amount collected (approximately one-third) or transplant oysters from unapproved waters to approved growing areas, as a form of

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[58] GA. COMP. R. & REGS. 391-2-4-18(2) (2020).

[59] *See generally*, GA. CODE ANN. § 27-4-187 (2019).

[60] The NSSP's "Guide for the Control of Molluscan Shellfish Model Ordinance" (Model Ordinance) outlines sanitary harvesting, processing, and distribution of shellfish. U.S. FOOD & DRUG ADMIN, GUIDE FOR THE CONTROL OF MOLLUSCAN SHELLFISH (2019), https://www.fda.gov/media/143238/download. The DNR regulations make any violation of the Model Ordinance a violation of DNR regulations. GA. COMP. R. & REGS. 391-2-4-.18(2) (2020).

[61] *Id.*

[62] Id. § 27-4-190; Zoom Interview with Bob Rheault, Executive Director, East Coast Shellfish Grower's Association (Jan. 28, 2021).

[63] GA. CODE ANN. § 27-4-188(1) (2019).

[64] Id. § 27-4-188(4). Cultch can also be "oak brush, cement-coated shingles, nongalvanized wire fencing, small gravel, or any other material approved by [CRD]". *Id.* "Culch material" can also be any other material approved by CRD that is conducive to larval oyster attachment and presumably would also include out-of-state shell, once that shell has been cured on land long enough for any biological material to die off. *See Id.* § 27-4-188(5).

"re-seeding" wild oyster beds for the industry.[65] Oyster larvae need shell or other forms of substrate on which to attach before they begin to grow their own shell, and Georgia's coastal waters are abundant in larvae but lacking in shell or other substrate, making re-seeding both a priority and an opportunity to further revitalize coastal ecology and resilience.[66]

The statute also defines important geographical signifiers such as the "intertidal" and "subtidal" area, as well as "water bottoms," the "lands within [Georgia] covered at mean high water from the salt water and freshwater demarcation line seaward to the state boundary."[67]

In fact, oysters are no longer harvested from "beds" legally speaking; rather, "wild" oysters are harvested from "intertidal water bottoms."[68] The law's changing terminology highlights the key new distinction between the old "intertidal water bottoms" and the new "subtidal water bottoms," where oysters are "below mean low tide" and "covered with seawater at all stages of the tide."[69] As noted above, oysters have not been traditionally harvested in these areas—or at least not specifically permitted and approved in Georgia law—largely because oysters do not grow extensively in Georgia's deeper waters because of predation and parasites. This fact, along with the fact that subtidal water bottoms will only be leased in areas where no wild oyster beds are present, shows how the distinction between "intertidal" and "subtidal" now largely—though not entirely— reflects the distinction between *wild* oyster harvesting and oyster *farming*.

Table 1 – Chart showing practical difference between intertidal/subtidal in oyster leasing

Oysters	Wild	Farmed	On-Bottom Cages	Off-Bottom Floating
Intertidal	Yes	Yes	Yes	No
Subtidal	No	Yes	Yes but unlikely	Yes and preferable

B. The Meat in the Shell: Statutory Permits, Leases, and Key Policy Provisions

While many aspects of Georgia's mariculture law have changed, certain laws and policies remain in place. The state of Georgia still owns all submerged lands below the ordinary high-water mark and the foreshore underlying navigable tidal

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[65] GA. CODE ANN. § 27-4-196(a) (2019).

[66] Bliss & Walker, *supra* note 17, at 2 (finding an over-abundance of *wild* oyster spat in Georgia causes overcrowding on natural reefs and results in poor quality oysters that are "long, thin and narrow in shape"); Power et al., *supra* note 9 (noting oyster habitat in Georgia is substrate-limited and not spat-limited).

[67] GA. CODE ANN. § 27-4-188 (2019).

[68] GA. CODE ANN. § 27-4-196(a) (2019).

[69] Id. § 27-4-188.

waters.[70] These lands are held in public trust and any coastal activities in these areas require state permission.[71] If a landowner does not have the exclusive right to harvest oyster beds under the 1902 Act and cannot prove a vested and valid "crown grant,"[72] the landowner must lease the right to harvest shellfish from the State through DNR, who delegates this responsibility to CRD.

Prior to the 2019-2020 amendments, Georgia law only offered leases on "state shellfish beds" in intertidal waters to harvest wild oysters.[73] After CRD received an application, it had a duty to determine the "nature, character, surroundings, and resource value of the area" that the applicant desired to lease. CRD had the discretion to determine whether the area was suitable for leasing, and whether issuing a lease was in the "best interests of the state."[74] CRD could then offer a lease of all or a portion of the area described in the application through a competitive public bidding process with discretion to choose which bid and bidder it considered "most advantageous to the state," but the law required CRD to give preference to Georgia residents over non-residents in the event of an "equal bid" or tie.[75]

The new law also establishes and permits subtidal water bottom leases, and the law's amendments also alter the permitting procedures for both lease types.[76] As noted, differentiating between intertidal and subtidal leases is important because farmers in subtidal waters have the capacity to use floating equipment to more efficiently grow oysters. Intertidal leases remain available and potentially able to utilize new techniques, such as cages that rest on water bottoms, because the amended law also allows those holding intertidal leases to retain the right to "harvest wild *or* maricultered shellfish."[77] When compared to intertidal growing techniques, however, subtidal floating equipment promotes faster growth, increased survival, and improved shell shape, making subtidal leases a more viable business choice.[78] One key difference that remains between the lease types is that floating equipment cannot be used on intertidal leases, though oysters can still be farmed there in cages or bags, whereas wild oysters will never be harvested on subtidal leases, both because they do not often naturally occur there and CRD must site subtidal leases away from wild oyster beds.[79]

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[70] State v. Ashmore, 224 S.E.2d 334, 341 (Ga. 1976).

[71] GA. CODE ANN. § 44-8-6 (1902).

[72] Id. § 52-1-2 (codifying English crown grant and common law public trust doctrines in 1992); Black v. Floyd, 630 S.E.2d 382 (Ga. 2006); Johnson v. State, 40 S.E. 807 (Ga. 1902).

[73] GA. CODE ANN. § 27-4-198(a-c) (1992) (previous version of Georgia's oyster law).

[74] *Id*.

[75] *Id*. *See Appendix* for a constitutional discussion of legal issues related to residency requirements.

[76] GA. CODE ANN. § 27-4-198(a)-(c) (2019) (current version).

[77] Id. § 27-4-198(a)(1) (2019) (emphasis added).

[78] Interview with Bob Rheault, *supra* note 51.

[79] *See Commercial Shellfish Harvest*, *supra* note 14.

1. Permitting Schemes

O.C.G.A. § 27-4-190 marks the first time the Georgia Code has explicitly made it unlawful to take or possess shellfish in commercial quantities or for commercial purposes without first obtaining a commercial fishing license with a shellfish endorsement and a master harvester permit or harvester permit.[80] CRD will not issue permits to people who violate the statute within two years of a permit application.[81] Permits can also only be issued to people certified by the DOA to handle shellfish, aligning the law with the NSSP Model Ordinance.[82]

Permitting involves a nearly ten-step process from various state entities.[83] First, an aspiring oyster farmer must have a master harvesting permit, with the prerequisite of a commercial fishing license with a shellfish endorsement and DOA certification.[84] Next, to farm oysters, the master harvester must obtain a shellfish mariculture permit from CRD, which requires a "detailed mariculture operational plan."[85] The plan must include the species farmed, types of gear, and amounts, locations, sources and types of shellfish seed including genetic strains, a storm mitigation plan, a wildlife interaction mitigation plan, and any other information required at CRD's discretion.[86] CRD also reserves the rights to impose additional permit requirements and conditions related to "shellfish production, mariculture operations, public rights of access and non-conflicting uses of permitted areas, and correction of environmental degradation resulting from the permitted activity," reflecting the statute's concern for public health, public trust waters, and environmental conservation.[87]

Next, the master harvester must obtain a $20,000 "performance bond" that must be issued by an insurance company in order for master harvesters to use subtidal leases.[88] The lease application must be accompanied by a letter from the CRD

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[80] GA. CODE ANN. § 27-4-190(1) (2019). Master harvester permits must specify if their employed "harvesters" are authorized to take oysters, clams, or other shellfish. *Id.* All harvesters must carry their harvester permits with them when harvesting. *Id.*

[81] Id. § 27-2-25. This change makes the amended law consistent with other Title 27 Game and Fish permits. *Id.* Master harvesters are in charge of their permitted "harvesters" and must also notify CRD if they fire an employee, as opposed to the employee simply having to turn over their harvesting permit.

[82] Id. § 27-4-190. The CRD website also "strongly encourages" master harvesters to obtain and maintain a Georgia Shellfish Sanitation Certificate, a Georgia Wholesale Fish Dealer License, and a Food Sales Establishment License from the Georgia Department of Agriculture. The statute indicates at least some of these certifications are required, probably the Sanitation Certificate that corresponds with the NSSP Model Ordinance. Id. § 27-4-190.

[83] *See* GEORGIA DEP'T OF NATURAL RESOURCES COASTAL RESOURCE DIVISION, SHELLFISH POLICY MANUAL (May 2021).

[84] GA. CODE ANN. § 27-4-202 (2019). DOA may grant special permission for "uncertified firms" to harvest or possess shellfish. [needs citation] These uncertified firms, if given permission, must tag the shellfish in accordance with NSSP guidelines. [needs citation]

[85] GA. CODE ANN. § 27-4-202(a) (2019).

[86] *Id.*

[87] Id. § 27-4-202(b).

[88] *Id.* Performance bonds are a relatively common practice in states with developed commercial oyster farming industries. Shellfish Policy Manual, supra note 83. They provide insurance against

director or his or her designee stating that the applicant's bond is acceptable.[89] CRD can use the bond money after giving notice to the master harvester of failure to comply with the statute.[90]

Because oyster farmers raise oysters from seed and then grow them in coastal waters, one of the key considerations for the farming operation is the number and type of devices used to house the oysters as they grow. The statute's final section provides for permitting floating oyster farming cages.[91] "The first time" a master harvester "obtains or renews a shellfish mariculture permit," that permit must be accompanied by another permit "establishing the maximum number of cages that may be deployed at any given time during that license year" in 25- cage increments at a permit fee of one dollar per cage.[92] Cage permits cannot be amended except at the time of permit renewal.[93] Each cage must have CRD-issued identification attached to it that matches the cages with the shellfish mariculture permit of the master harvester.[94] After meeting these robust permitting requirements, master harvesters must also obtain a lease.

2. Application Processes

Georgia's oyster law both changes the application process for intertidal leases and creates a new process for subtidal leases. The law retains the public competitive bidding process for intertidal leases, but the process now only requires "an application in writing to the department in the manner and time as described by the department in the competitive bid advertisement."[95] The law no longer requires CRD to ascertain the suitability of the proposed lease site in the application because applicants no longer propose their own lease sites. The lease sites are now determined by CRD in advance of the public bidding process.[96] This change also

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oyster farmers abandoning equipment or seed, and provide an incentive and a means to clean lease areas after storms. Id.

[89] GA. CODE ANN. § 27-4-202(d) (2019).

[90] Id. § 27-4-202(e).

[91] Id. § 27-4-204. Importantly, "cage" is not statutorily defined, and what constitutes a cage will be an important CRD decision.

[92] Id. § 27-4-204(a).

[93] Id. § 27-4-204(b)(1). Harvesters must carry their cage permits with them when harvesting. *Id.*

[94] Id. § 27-4-204(c). These identifications can be reused from year to year. *Id.* Also, the new requirements exempt containers used for clams. Id.

[95] Id. § 27-4-198(a)(1). The original law stated five application requirements to lease intertidal shellfish beds: (1) Name and legal residence of the applicant; (2) a National Oceanic and Atmospheric Administration (NOAA) chart indicating the area desired to be leased; (3) the names and addresses of adjacent landowners as recorded on county tax maps and verification of such information in such forms as the department may prescribe; (4) the proposed plans for managing the resources; and (5) such other information as the department may prescribe. GA. CODE ANN. § 27-4-198(a) (1991).

[96] The requirement that CRD publish notice for two weeks in the legal organ of the county or counties of the proposed lease area to be bid upon remains and requires a "description of the area proposed to be leased." Ga. Code Ann. § 27-4-198(a)(2). Because the law as amended no longer requires applicants to submit such a description, the impetus appears to be on CRD to provide

applies to subtidal leases, but CRD will use a lottery system for their selection.[97] The law sets a new minimum rate for intertidal leases at $15 per acre,[98] explicitly provides that these leases can be used for wild harvest or mariculture, and notes that the permit will contain minimum "production requirements."[99] The amended law now *requires* CRD to prefer Georgia residents over non-residents[100]—not just when they submit equal bids—and somewhat vaguely allows CRD to consider a lease applicant's "previous performance and compliance" in "exercising its discretion" to grant leases.[101]

Subtidal leases contain additional considerations and requirements, notably related to the public trust.[102] As noted above, CRD must "consider compatibility with other public uses of the marine and estuarine resources in proximity of the lease area that include, but are not limited to, navigation, fishing, swimming, and other forms of recreation," and the recent DNR regulations reinforce this commitment.[103] Subtidal leases will be "issued through a lottery devised and operated by [CRD]" and though "[p]reference may be given to certified firms, lease holders, and state residents," notably absent is a requirement to prefer state

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such a description, though the new regulations do not address intertidal water bottom leases at all. Each sealed bid must be accompanied by a detailed management plan for working the intertidal lease area for wild harvest or mariculture, but it is not clear the applicant knows what intertidal water bottoms they may be leasing, nor have the applicants provided any description—legal, NOAA, or tax—and may not know of one, other than that published, presumably by CRD, in the public organ.

[97] *See infra* note 93. Id. § 27-4-204.

[98] *Id.* Under the previous law, no minimum rate for intertidal leases existed. Intertidal leases can be quite large, and the entire lease area may not get used each year, so the increased rate could present financial problems for some wild harvesters.

[99] *Id.* Other states have expressed concerns that outside investors or citizens with waterfront property, who have no experience with oyster farming, could buy up leased areas and not put them to use, effectively stopping local and experienced growers from using those areas. Interview with Bob Rheault, *supra* note 50. This language seeks to deter this type of behavior, implementing a "use it or lose it" ethic. *Id.*

[100] GA. CODE ANN. § 27-4-198(a)(3) (2019). This "residency requirement" does not raise legal issues for the *wild* oyster resource but requiring in-state preference for a commercially *farmed* oyster product implicates constitutional concerns under the Commerce and Privileges and Immunities Clauses. For example, the State could perhaps require out-of-state applicants to pay a higher fee, if that fee was not unduly burdensome, but it cannot discriminate in favor of its own residents in interstate commerce, especially if it is not preserving the privilege of its *wild* oyster resource for its own citizens. *See Appendix* for a legal memorandum on these issues.

[101] *Id.* While prior experience with shellfish mariculture and prior shellfish leaseholders now receive priority points in CRD's subtidal lottery system, no such lottery exists for intertidal leases. Nonetheless, this "previous performance and compliance" clause appears to be a blanket statement of CRD's discretion to issue or choose not to issue intertidal leases. The clause could refer to not meeting production or harvesting requirements, or breaking rules related to signage or boat usage. The language is vague.

[102] GA. CODE ANN. § 27-4-198(b) (2019).

[103] *Compare Id. with* GA. COMP. R. & REGS. 391-2-4-.18(6)(e). This overlap represents one of the few times the statute and regulations directly address the same issue in the same way, perhaps reflecting a heightened concern.

residents.[104] The siting of subtidal leases remains subject to CRD discretion.[105] Though the process will be conducted through a point system, the details of such a system do not appear in the statute or the regulations.[106] The minimum rate for subtidal water bottom leases is$50 per acre, at least hinting at the fact that these leases may be more difficult to site, more desirable, and more profitable in the oyster industry.[107]

Georgia law also codifies uniform requirements for both intertidal and subtidal water bottom leases. Leaseholders must pay an annual fee.[108] Both leases must be recorded by the clerk of the superior court of the county or counties in which the leased area is located within thirty days.[109] The lease terms last ten years and may be renewed if in good standing.[110] Leases are transferable and inheritable with written approval and a $50 fee to sell or trade unless a "leasee [sic] dies or is permanently and totally disabled."[111] Leases may not be transferred if records indicate that the lessee has not harvested from the lease within the past three years, a statutory incentive for oyster farmers to "use it or lose it,"[112] but nonetheless codifying an important aspect of property rights.

3. Key Practical Provisions: Summer Harvest and Oyster Seed

Georgia's new law allows CRD to grant special permission for the taking or possession of shellfish in areas or periods of time that are not "open" for shellfishing.[113] The special permission to harvest shellfish during "closed season" is notable because of its potential to allow Georgia oyster farmers to operate year-round. Public health risks related to oysters do exist, especially in warmer summer months due to *Vibrio vulnificus*, a bacteria that causes food-borne illness found in

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[104] GA. COMP. R. & REGS. 391-2-4-.18(6)(e). As will be explained below, residency remains one of the key factors in the lottery "point" system.

[105] GA. CODE ANN. § 27-4-198(b) (2019).

[106] The Shellfish Advisory Committee outlined the point system at its March 2021 meeting, awarding points for obtaining DOA certification, holding existing shellfish permits, shellfish experience, and state citizenship for a total of six points. SHELLFISH POLICY MANUAL, *supra* note 84, at 19. The total points will then determine the "draft order" of the lottery system, with the highest point holders choosing lease sites first. *Id*. at 6. If all leases have been chosen, those with lower point totals will not be given a lease, even though they may have expended significant time and capital to meet the statutory requirements. *Id*.

[107] GA. CODE ANN. § 27-4-198(b)(3) (2019).

[108] ID. § 27-4-198(c).

[109] ID. § 27-4-198(d).

[110] ID. § 27-4-198(e). Additionally, CRD's website indicates that leases may be terminated if the master harvester fails to maintain on-shore storage and processing facilities, fails to adequately supervise employed harvesters, or fails to maintain the leased area in accordance with state law. *See Commercial Shellfish Harvest*, *supra* note 14.

[111] Id. § 27-4-198(f)(2). Such a "disabled" condition must prevent "gainful employment" and contain certification by an appropriate agency. *Id.* In these situations, "leases may be inheritable and transferable to the leasee's [sic] spouse, siblings, lineal descendants, or lineal ancestors without payment of a transfer fee." *Id.*

[112] ID. § 27-4-198(f)(3).

[113] ID. § 27-4-195.

shellfish that have been improperly handled or stored without proper cooling.[114] Modern refrigeration and other on-site cooling methods can scientifically alleviate these risks by immediately killing the bacteria upon harvest.[115] The new law at least codifies that permission to harvest year-round hypothetically could be granted and outlines relevant factors CRD may consider in granting it, such as a master harvester's past compliance with the state's oyster law.[116] The mere possibility that oyster farmers could harvest year-round is a big step in the development of Georgia's regulatory framework. All other Eastern Seaboard and Gulf states currently permit year-round harvest for oyster farming—even if closed seasons still remain for wild harvest—because year-round harvest helps ensure the business overhead and other legal requirements are worth the endeavor.[117] Some advocates and stakeholders, however, think the new special exemption does not do enough to further the interests of the oyster farming business.

The statute also details requirements for out-of-state oyster hatcheries to sell oyster seed to Georgia.[118] Georgia does not currently have a private oyster seed business, although the hatchery at the University of Georgia's Marine Extension on Skidaway Island has been producing seed for over ten years in significant quantities.[119] One of the key issues around oyster seed from out-of-state is the potential introduction of disease to which the native oyster population is not resistant, and the law now outlines legal requirements for ensuring out-of-state seed is safe to use, both for the environment and the business, as well as public health. CRD has discretion to conditionally certify shellfish hatchery and nursery operations within the state, approve out-of-state hatcheries for importation of shellfish seed into the state, and issue authorization to shellfish hatchery and nursery operators to receive shellfish for mariculture activities.[120] CRD must approve such activities and may revoke permits for failure to comply.[121]

4. Key Policy Provisions: Public Health and Sustainability

Georgia law allows an exception for "uncertified firms" to take or possess shellfish in commercial quantities if DOA grants them special permission.[122] Both

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[114] Vibrio and Oysters, CTRS. DISEASE CONTROL & PREVENTION, https://www.cdc.gov/vibrio/vibrio-oysters.html (last visited Mar. 15, 2021); *Oysters and Vibriosis*, CTRS. DISEASE CONTROL & PREVENTION, https://www.cdc.gov/foodsafety/communication/oysters-and-vibriosis.html (last visited Mar. 15, 2021).

[115] Kit W. Pollard, *The old oyster R-month rule*, Baltimore Sun (June 10, 2014 12:00 AM), https://www.baltimoresun.com/entertainment/bs-xpm-2014-06-10-bal-the-rmonth-rule-for-eating-oysters-20140610-story.html; *see also* Greenhill-Taylor, *supra* note 19.

[116] GA. CODE ANN. § 27-4-195 (2019).

[117] Interview with Bob Rheault, *supra* note 50.

[118] GA. CODE ANN. § 27-4-203 (2019).

[119] *Oyster Hatchery,* UNIV. OF GA. MARINE EXTENSION SERV. & GA. SEA GRANT, https://gacoast.uga.edu/outreach/programs/oyster-hatchery/(last visited Feb. 12, 2021).

[120] GA. CODE ANN. § 27-4-203(a) (2019).

[121] *Id*.

[122] ID. §§ 27-4-197(d), 27-4-202.

O.C.G.A. § 27-4-190 and O.C.G.A. § 27-4-197(d) eliminated the previously existing language and requirement that the taking or possession of shellfish be "for mariculture purposes," if or when the DOA issues special permission (i.e. without a master harvester permit). O.C.G.A. § 27-4-197, however, requires DOA to conduct a shellfish program in accordance with the Food and Drug Administration ("FDA"), but the amendments also added a new provision requiring "uncertified master harvesters" to tag the shellfish they harvest in accordance with the guidelines provided by the NSSP.[123] This section is located directly before the section that removes the requirement that "uncertified firms" take or possess shellfish for "mariculture purposes," so the overall effect of O.C.G.A. § 27-4-197 is to ensure that all harvesting, taking, or possessing of shellfish in done according to well-established health and safety guidelines, either those implemented by the DOA under the FDA or those published by the NSSP. This statutory section is the only section in the prior and current versions of Georgia's law to use the word "uncertified," and the fact that it does so in the context of tagging, shipping, and handling seems to ensure that all entities, certified and uncertified, follow proper sanitation procedures. Public health, as one of the three explicitly stated overall purposes in the amended statute, remains a key concern.

O.C.G.A. § 27-4-196 marks the first permission for the use of "culch" as a replacement material for "wild" oyster beds. Previously, the statute required that the exact oyster shells taken from a wild oyster bed be used as the material replaced upon it in order to preserve oyster beds and promote wild larval attachment to shell or other substrate. Likewise, O.C.G.A. § 27-4-199, while not amended, authorizes game wardens and "other authorized personnel" to confiscate any shellfish discovered in violation of the law. These personnel must destroy the shellfish or "return them to the resource," affirming the continuing ecological mission of the statute by using all opportunities to create more oyster habitat.[124] As mentioned above, wild harvesters must return culch "to the resource," but because subtidal leases will be sited away from wild oyster beds and will not be utilizing the wild resource, this requirement does not exist for subtidal leaseholders.[125] These seemingly small changes indicate the continuing emphasis on public health and sustainable use of the state's oyster resources under Georgia's legal framework, incorporating both the practical and environmental considerations of a more robust oyster industry.

C. The Briny Finish: CRD's Shellfish Rules and Regulations

On March 1, 2020, DNR adopted and published its first set of regulations related to oyster farming in Title 391 for the Department of Natural Resources, in Subtitle 2 for Coastal Resources, and Chapter 4 for Saltwater Fishing Regulations.[126] The purpose of the regulations is to implement the authority given

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[123] Id. § 27-4-197(c).

[124] Id.. § 27-4-199.

[125] *See supra* note 121.

[126] GA. COMP. R. & REGS. 391-2-4-.18.

to CRD to manage the mariculture industry "in accordance with sound principles of wildlife research and management," as established and amended in O.C.G.A. §§ 27-1-4, 27-4-189, 27-4-195. These rules and regulations further provide for "shellfish sanitation, seed importation, and water bottom lease terms."[127]

First, the regulations adopt the NSSP Model Ordinance, a standard regulation in the oyster industry designed to further the new law's policy of promoting public health for sanitary harvesting, processing, and distribution of shellfish by making any violation of the Model Ordinance a violation of regulation.[128] Then, the regulations provide for the certification of oyster seed from hatcheries and nurseries.[129] The regulations require that all hatcheries and nurseries—whether in-state or out-of-state—that provide shellfish seed to a leaseholder must be certified by DNR and CRD.[130] The out-of-state hatcheries and nurseries have additional requirements imposed upon them, including a Certificate of Health from a DNR-approved pathologist who must attest that the seed is free from disease and pathogen.[131] The DNR-approved pathologist must also specify the location, size, and species of the shellfish seed tested, include a list of any diseases or pathogens in the seed, and prove the seed was tested within 30 days of entering the state.[132] From the regulations, it is unclear if any and all diseases and pathogens are impermissible, or if diseases or pathogens already present in the Georgia marine environment may be permitted if listed on the Certificate of Health. The regulations also authorize DNR to visually inspect out-of-state shellfish seed for size or species non-conformity prior to the seed being placed on a lease.[133]

CRD's regulations provide further subtidal lease specifications. Subtidal leases will be: (1) in approved growing areas, (2) at least 200 feet wide at low tide, (3) at least six feet deep at low tide, [134] (4) in areas that do not interfere with existing wild shellfish beds, "live bottoms," or salt marshes, (5) not within 150 feet of a federal project or "federally maintained channel," (6) not within 50feet of an existing commercial, communal, or private dock, and (7) not within 50feet of shoreline at low tide.[135] CRD must determine that the leased area is compatible with species' critical habitat, bait shrimping zones, and Heritage preserves.[136] CRD must also make three considerations when siting subtidal water bottom leases: (1) pre-existing, public trust uses of the waterway but also "riparian viewsheds" and

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[127] *Id*.

[128] GA. COMP. R. & REGS. 391-2-4-.18(2).

[129] *Id.*

[130] *Id.*

[131] GA. COMP. R. & REGS. 391-2-4-.18(5)(b).

[132] *Id*. Hatcheries, nurseries, and master harvesters must keep copies of the Health Certificate for at least three years.

[133] GA. COMP. R. & REGS. 391-2-4-.18(5)(c).

[134] This depth does not correlate with practices seen in neighboring states. Confidential Sources #4 and #5, *supra* note 41. For example, the depth makes a walking "long-line" system nearly impossible to use. *Id.*

[135] GA. COMP. R. & REGS. 391-2-4-.18(6)(b-c).

[136] GA. COMP. R. & REGS. 391-2-4-.18(6)(d). The regulations also give CRD discretion to "evaluate such other considerations as it deems necessary." 391-2-4-.18(6)(e).

research sites; (2) property owners' riparian rights to construct docks or marinas; and (3) "dynamic shorelines."[137] The regulations reaffirm that all water bottom mariculture leases will not exceed ten years, and both leases and lease renewal will be subject to CRD conditions and lessee compliance.[138]

D. The Coastal Marshlands Protection Act Exception

Georgia's oyster law also amended the Coastal Marshlands Protection Act of 1970, a groundbreaking act declaring that "the coastal marshlands of Georgia comprise a vital natural resource system" and so provide for their future.[139] The General Assembly found that "the estuarine area of Georgia is the habitat of many species of marine life and wildlife and, without the food supplied by the marshlands, such marine life and wildlife cannot survive," and "intensive marine research has revealed that the estuarine marshlands of coastal Georgia are among the richest providers of nutrients in the world."[140] More than fifty years ago, the Georgia General Assembly understood that "marshlands provide a nursery for commercially and recreationally important species of shellfish and other wildlife, provide a great buffer against flooding and erosion, and help control and disseminate pollutants . . . [they are] a natural recreation resource which has become vitally linked to the economy of Georgia's coastal zone and to that of the entire state."[141] Because this coastal marshlands resource system is "costly, if not impossible, to reconstruct or rehabilitate once adversely affected by man related activities and is important to conserve for the present and future use and enjoyment of all citizens and visitors," the General Assembly found the state's coastal marshlands to be of "more than local significance . . . of equal importance to all citizens of the state . . . of state-wide concern, and . . . properly a matter for regulation."[142] These same concerns may have been part of the reason some Assembly Democrats voted against HB 501 when enacted and remain a vital part of the ecological successes found in the biodiversity and stirring natural beauty of Georgia's coastal waters and barrier islands.

The aspirational language is more than hyperbole—it has teeth. One of the key statutory provisions of the act requires anyone seeking to "remove, fill, dredge, drain, or otherwise alter *any* marshlands" to obtain a permit or other permission from DNR, a broad reach approaching that of the Clean Water Act's wetland permitting.[143] The law imposes significant restrictions on activities, especially construction-related, in the marshlands and allows for inspections and enforcement.

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[137] GA. COMP. R. & REGS. 391-2-4-.18(6)(e). As of March, the first siting and vetting is currently underway. The Shellfish Advisory Committee will host public forums for notice and comment in counties where leases will be sited in approved growing areas, including Camden, Glynn, McIntosh, Liberty, and Chatham Counties.

[138] GA. COMP. R. & REGS. 391-2-4-.18(6)(a). *See* Harris, *supra* note 24.

[139] GA. CODE ANN. § 12-5-281 (1992).

[140] *Id*.

[141] *Id.*

[142] *Id.*

[143] ID. § 12-5-286.

"Coastal marshland" is also broadly defined as "any marshland intertidal area, mud flat, tidal water bottom, or salt marsh in the State of Georgia within the estuarine area of the state, whether or not the tidewaters reach the littoral areas through natural or artificial watercourses."[144]

Like many laws, the Coastal Marshlands Protection Act also contains exceptions.[145] The original exceptions included Department of Transportation (DOT) operations necessary for public roads or drainage systems, maintaining navigable harbors and rivers, and maintaining public utilities like power, sewage, and drinking water. The exceptions also include riparian rights, particularly the building of private docks above the marsh grass so long as they do not obstruct tidal flow, and the reclamation of manmade boat slips on islands with publicly funded construction projects.[146] In 2008, the General Assembly amended the Act to contain a series of new specifications regarding docks, requiring maintenance but also providing that up to four adjacent landowners could enter into "a binding covenant that runs with the land" to prohibit the building of any future private dock.[147] The original dock exception required fifty feet of land adjoining marshland, so the recent amendment allows up to four property owners to meet that specification and still enjoy a minimally invasive private dock for their exclusive noncommercial use. While docks are often used for mariculture activities, this exception does not cover commercial mariculture uses.

The latest statutory exception to the Coastal Marshlands Protection Act, however, allows for the "placement of gear for mariculture activities regulated by [CRD] such as anchors, cages, "upwellers," and any other gear as [CRD] determines to be required.[148] This exception effectively allows intertidal and subtidal leaseholders to use modern floating equipment in Georgia's coastal marshlands. The exception also highlights the ecological benefits that farmed and wild oysters provide to the salt marsh ecosystem, as well as the fact that oyster farming is not likely to be harmful to these areas and in fact may help protect them. As noted above, CRD regulations reinforce this amendment by making sure that subtidal water bottom leases are not within fifty feet of any dock or any property that could include a place with "riparian viewsheds" or "areas where property owners may exercise riparian rights to construct docks or marinas."[149]

E. Recent Updates: the Lottery Point System and Policy Manual

At the March 2021 meeting of the Shellfish Advisory Committee, CRD

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144 ID. § 12-5-282.

145 *See* Harris, *supra* note 24 (emphasizing the importance of these exceptions in getting the law passed).

146 GA. CODE ANN. § 12-5-282(1)-(8) (1992).

147 Id. . § 12-5-282(7.1).

148 Id. § 12-5-282(9).

149 GA COMP. R. & REGS. 391-2-4-.18(5)(e). Dockage will, however, likely be essential to subtidal leaseholders for not only for boat access but also for transportation of hatchery seed oysters to the lease site, securing upwellers to raise oyster seed, and unloading mature adult oysters for tumbling, packaging, and shipping.

announced its minimum criteria for entering the subtidal lease lottery.[150] In order to "select law abiding applicants with adequate financial resources and to provide continued new subtidal mariculture opportunities," CRD requires applicants to have (1) a valid Georgia commercial fishing license with a shellfish endorsement and (2) evidence of a $70,000 bank instrument, examples of which include a pre-approval letter, proof of funds letter, or line of credit.[151] Additionally, the applicants must *not* (3) have any violations of CRD's Game and Fish laws and regulations within the previous two years; (4) have previously "won" a lease in the lottery in the past three years; or (5) currently lease more than thirty acres of subtidal water bottoms.[152]

"Due to limited subtidal leasing opportunities," CRD developed a priority point system "to select the most qualified individuals" for these leases.[153] The system awards one point to state residents, one point for DOA shellfish certification, and one point for existing shellfish lease holders.[154] The system also offers additional points for "evidence of experience with commercial molluscan shellfish operations," which may include Hazard Analysis and Critical Control Plan (HACCP) certification, landing/shipment/receiving records, employment history with references, lease contracts, records of retail sales, or further DOA certification.[155] Lottery applicants are awarded one point for one to three years of experience, two points for four to sevenyears of experience, and three points for eight or more years of experience.[156] Applicants are then placed into pools based on their total priority points and selected at random from within their pool placement, beginning with the pool with the most points and continuing through the pool of applicants in the order of decreasing priority points until all available leases are granted or applicants exhausted, whichever comes first. The "winners" are offered leases in the order determined by the lottery. CRD conducted its first lottery in June 2021 and awarded three leases for the Mud River Mariculture Zone in McIntosh County,[157] with a second lottery result in Savannah, Chatham County, expected in early 2022. Finally, CRD released its first Shellfish Policy Manual in early May 2021 to provide details of all of the policies and procedures that have been vetted to date by members of the Shellfish and Mariculture Advisory Panel, Department Staff and other industry partners.[158]

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[150] *See* SHELLFISH POLICY MANUAL, *supra* note 84, at 19–20.

[151] According to CRD, the $70,000 figure is based off of the University of Georgia's Oyster Crop Budget Tool. *Id*.

[152] *Id.*

[153] *Id.*

[154] *Id*.

[155] CRD does not specify if or how this certification is different from the prior DOA shellfish certification, but it could potentially involve the Georgia Wholesale Fish Dealer or Food Establishment licenses offered by DOA.

[156] SHELLFISH POLICY MANUAL, *supra* note 84, at 19.

[157] *See infra* Figure 3.

[158] *See* SHELLFISH POLICY MANUAL, *supra* note 84.

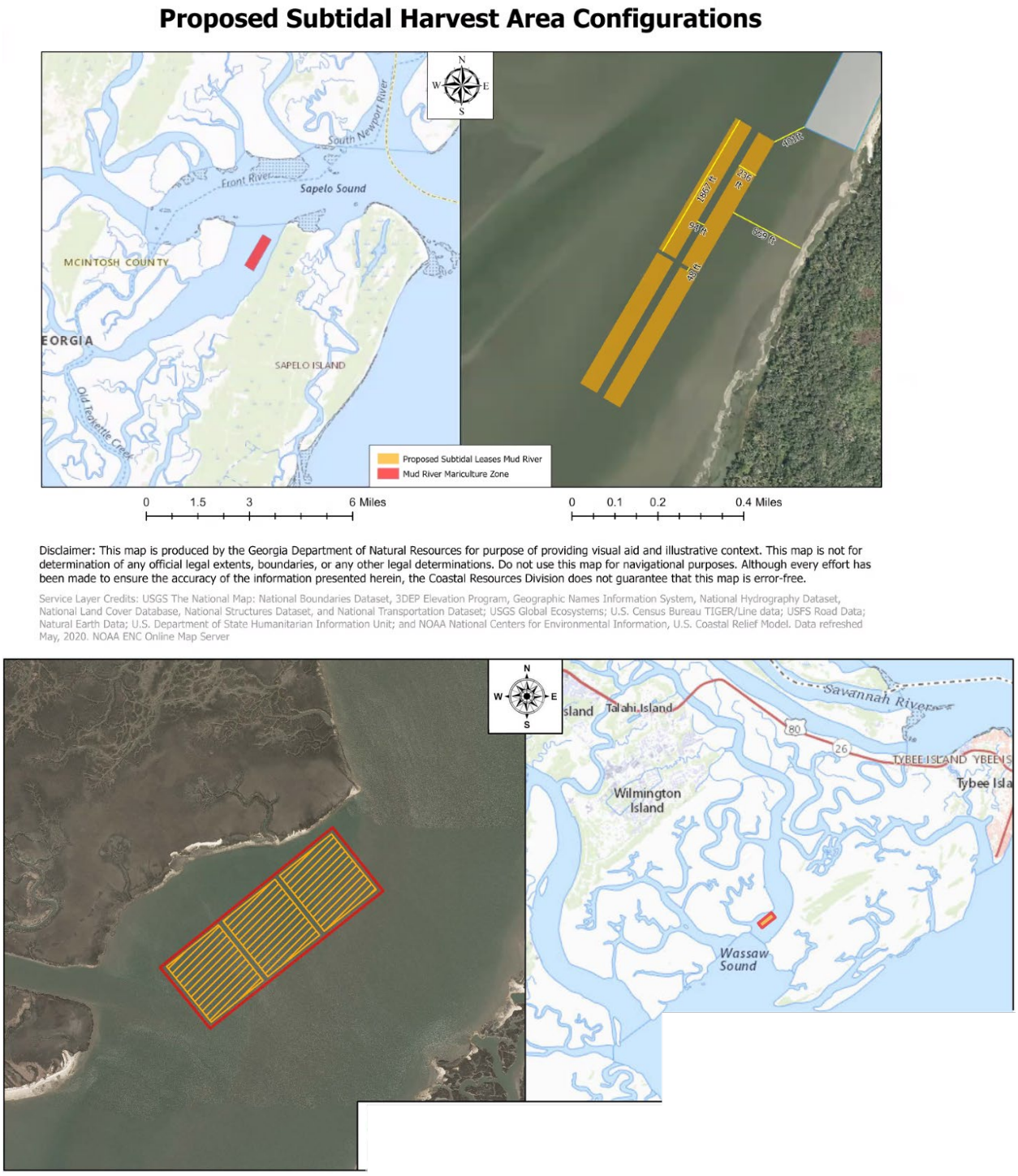

Figure 2. Subtidal Lease Areas on Mud River near Sapelo Island, Georgia and Wassaw Sound between Wilmington and Tybee Islands, Georgia.

V. Shelling it Out: Comparing and Contrasting Oyster Law in Georgia and the Southeast's "Core Corner Four" States

The irony of the current state of the Georgia oyster law and regulations is to continue to encourage intertidal leases—and perhaps even require oyster farming experience in that context—before allowing potential farmers to "win" a subtidal lease under the lottery point system. This situation forces prospective oyster farmers into the most difficult and least economically viable form of oyster farming, while also somewhat depleting the state's wild oyster bed resources, rather than more fully promoting the modern form of oyster farming that can be most easily scaled into a viable business.[159] The floating oyster farming industry, on the other hand, could help preserve, promote, and even restore the state's wild oyster bed resources by improving the state's coastal marshland water quality and mitigating erosion, stormwater surge, and coastal flooding, thereby strengthening coastal economic and ecological resiliency.

This industry can create tax benefits and encourage the growth of community-based businesses, ranging from agrotourism trails to farm-to-table shell recycling projects to oyster gardening enthusiasm, and can add millions of additional water-purifying filter feeders to Georgia's coastal waters. Georgia consumers may continue to eat farmed oysters from around the country but not without the substantial in-state benefits and pride of their own historic and delicious commercial oyster farming industry. To be sure, Georgia's law and regulations create a framework that will permit oyster farming in clustered "harvest areas" that have the potential to grow the industry, but many of the details, permits, partnerships, and benefits will need to be monitored and catalogued as CRD implements its framework in 2022 and beyond.

Georgia is now the second to last coastal state in the United States to regulate oyster farming.[160] Because so many other Eastern Seaboard and West Coast states have developed oyster farming industries, Georgia also has the benefit of not being the first state to confront issues that arise. The Appendix contains detailed chart comparisons of various aspects of other state programs, ranging from the year the state adopted legislation to residency requirements to notice and due process notice for proposed shellfish leases. Directly analyzing Georgia's law, however, in relation to the "core corner four" states of Florida, South Carolina, North Carolina, and Alabama, highlights both important aspects of the law and potential pitfalls, as well as prudent parts of state legislation, regulation, and best practices.

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[159] Interview with Bob Rheault, *supra* note 51.

[160] Georgia beat Texas to the punch on the law, but Texas has now put oysters in the water before Georgia; Erich Luening, *Texas passes law allowing oyster aquaculture,* SEAFOODSOURCE (June 5, 2019) https://www.seafoodsource.com/news/aquaculture/texas-passes-law-allowing-oyster-aquaculture. *But see* Jennifer Kornegay, *Farm Fresh ~ The Texas Oyster Company*, OYSTER SOUTH, (Mar. 8, 2022), https://www.oystersouth.com/stories/2022/3/7/farm-fresh-the-texas-oyster-company; Sarah Swetlik, *Georgia's fledgling oyster industry struggles to meet demand*, FRESH TAKE GA. (Feb. 15, 2022), https://freshtakegeorgia.org/georgias-fledgling-oyster-industry-struggles-to-meet-demand/.

A. Leasing and Permitting in the Core Corner Four

Florida and Alabama have booming aquaculture programs in addition to their historic wild oyster business in Apalachicola Bay[161] and Murder Point, and their experience demonstrates how regulatory agencies can utilize sophisticated management tools and media to be effective industry partners.[162] The Carolinas show how quickly political processes can both jumpstart and hamper the oyster farming industry and leave regulatory agencies constantly troubleshooting even when comprehensive plans are in place.[163] Other Gulf and Chesapeake Bay states also indicate the variety of potential avenues and outlooks an oyster farming industry can create and develop, as well as the unforeseeable events that can alter the course a state takes.

1. State Rules and Regulations

As noted at the outset, Florida houses its Aquaculture Division in the Department of Agriculture and Consumer Services (DACS), not the Natural Resources, Fisheries, or Wildlife Division, a somewhat unorthodox arrangement.[164] When an individual or LLC applies for a lease, they can apply for a parcel in an "aquaculture use zone" (AUZ), or they can propose a new location in an existing shellfish harvesting area.[165] New locations must be evaluated to avoid seagrass, hard bottoms, existing shellfish reefs or beds, and endangered species critical habitat.[166] Florida's Board for Internal Improvement, effectively the unit whose duty it is to hold the state's land and waters in public trust, establishes new

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[161] It is worth noting, however, that wild oyster harvesting in Apalachicola Bay will be closed for several years due to failing environmental factors, an action also seen on the west coast due to ocean acidification, perhaps further pointing to the importance of a sustainable oyster farming industry that helps protect and restore wild oyster beds. For a great overview of the historic Florida oyster industry, *see* Carrie Honaker, *The Fall and Rise of Florida Oysters*, THE LOCAL PALATE (Feb. 7, 2022), https://thelocalpalate.com/articles/fall-rise-florida-oysters/.

[162] *See e.g.*, BULLETIN FOR SHELLFISH AQUACULTURE LEASE MGMT., FLA. DEP'T OF AGRICULTURE AND CONSUMER SERVICES, https://www.fdacs.gov/ezs3download/download/91987/2597638/Media/Files/Aquaculture-Files/Shellfish-Aquaculture-Lease-Management-Technical-Bulletin-5/FDACS-P-02154-ShellfishLeaseManagement%28TB%2305%29.pdf (Last visited Apr. 28, 2021).

[163] Fodrie et. al, *North Carolina Strategic Plan for Mariculture: A Vision to 2030*, N.C POL'Y COLLABORATORY, https://collaboratory.unc.edu/wp-content/uploads/sites/476/2019/01/NC-Strategic-Plan-for-Shellfish-Mariculture-Final-2018.pdf (last visited Apr. 28, 2021).

[164] FLA. STAT. ANN. § 253.67 (2005) (defining "department" as the Department of Agriculture and Consumer Services or DACS); Fla. Stat. Ann § 379.2521 (2008) (Natural Resources Title granting regulatory authority of marine aquaculture products to DACS and exempting DACS from Fish and Wildlife Conservation Commission resource management rules).

[165] *Aquaculture Submerged Land Leasing*, Fla. Dep't of Agriculture and Consumer Services,https://www.fdacs.gov/Agriculture-Industry/Aquaculture/Aquaculture-Submerged-Land-Leasing (last visited Mar. 16, 2021); *Florida Application for a State-Owned Sovereignty Submerged Land Aquaculture Lease*, Fla. Dep't of Agriculture and Consumer Services,http://shellfish.ifas.ufl.edu/wp-content/uploads/Lease-Application-Form.pdf (last visited Mar. 16, 2021).

[166] *Id*.

aquaculture use zones at DACS' request when DACS receives more than ten applications, or ten informal requests, in a given area.[167] In these AUZs, Florida issues leases on a first come, first serve basis with a maximum initial lease term of ten years.[168] AUZs do not require an additional permit from the United States Army Corps of Engineers (ACE) because DACS has a "general permit"[169] for these zones, though not for proposed lease sites not already in an AUZ. Florida appears to be unique, at least among southeastern states, in this regard.[170] The permitting process is lengthier for proposed sites, which still must be in approved shellfish growing areas, strictly monitored for water quality, and require additional approval from Florida's Environmental Protection Division, Fish and Wildlife Service, and the State Department, as well as the ACE permit. Florida law also provides for reasonable access to the water for public trust activities like fishing, swimming, and boating.[171] While Florida oyster farming legislation first developed in 2000, the state has a long and storied commercial fishing history, with water on three sides, quite unlike its neighbors.

While South Carolina law allows for a lottery where two or more qualified people apply for the same area, the lottery has not been used since the law passed in 1999.[172] South Carolina uses "intertidal" and "subtidal" language similar to Georgia but only grants "culture" (wild harvest) or "mariculture" (farming) leases and permits to state residents, who must have lived in-state for at least one year.[173] Harvesters may select from pre-approved areas or propose their own.[174] Applications are sent to the Shellfish Permit Committee, which votes on whether

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[167] Confidential Source #4*, supra* note 41.

[168] FLA. STAT. ANN. § 253.71 (2000).

[169] Shellfish aquaculture operations, including oyster farming, are also subject to federal regulations, including the Clean Water Act (CWA) and Rivers and Harbors Act (RHA). *See* 33 U.S.C. § 1344; 43 U.S.C.A. § 1333(a)(2)(A); *see also Shellfish Aquaculture Permitting Under Nationwide Permit 48,* Mississippi-Alabama Sea Grant, http://nsglc.olemiss.edu/projects/shellfish-aquaculture/files/casestudies.pdf (last visited Mar. 16, 2021). To ensure that these regulations are met, ACE administers a permit-process for shellfish aquaculture operations in state waters. Growers or farmers must not only receive the appropriate permits from ACE, but they also must get the required state permits and meet any other local requirements. Although some state permitting programs and agencies work with ACE to streamline permitting or offer joint applications, not all states do so, and this process may take considerable time.

[170] Confidential Source #4, *supra* note 41. Other northeastern states have general permits, some subject to specific conditions. *State-by-State Shellfish Aquaculture Permitting Information (October 2017)*, Nat'l Oceanic and Atmospheric Admin.., https://cdn.coastalscience.noaa.gov/page-attachments/research/State-by-State_Shellfish_Aquaculture_Permitting_Oct17.pdf (last visited Apr. 28, 2021).

[171] FLA. STAT. ANN. § 253.72 (2000).

[172] *Former Sea Grant Legal Fellow Chris Bertrand Interviews with Angel Brown*, Commercial Saltwater Licenses Head, Marine Resources Division, S. C. Dep't of Natural Res. (date unknown).

[173] S.C. CODE ANN. § 50-5-905(2000); *Shellfish Culture Permits*, S. C. Dep't of Natural Res. Marine Div., https://www.dnr.sc.gov/marine/shellfish/culturepermits.html (last visited Apr. 28, 2021).

[174] *Application for Shellfish Culture Permit*, S. C. Dep't of Natural Res. Marine Res. Div.http://www.dnr.sc.gov/marine/shellfish/pdf/ApplicationforShellfishCulturePermit.pdf (last visited Mar. 17, 2021).

to recommend approval of the lease from South Carolina Department of Natural Resources (SC DNR).[175] The lease sites have a cap or limit on lease acreage—500 acres of water bottom and 100 acres of surface per entity—and SC DNR issues leases in five-year increments. South Carolina, also like Florida and Alabama, has a permit assistance office and established one application form that all permitting entities have to use, including streamlined permitting with ACE.[176] The law designates that only one permit will be granted per "Shellfish Culture Permit Area," but "within the perimeter boundary of an existing Shellfish Culture Permit, [SC DNR] may grant permits for mariculture for waters or bottoms not then under culture permit."[177] This feature provides for permitting oyster farming on a pre-existing wild harvest permit and directly addresses the relationship between wild harvesting and oyster farming.

In North Carolina, the Division of Marine Fisheries (DMF) governs oyster regulations.[178] North Carolina requires "shellfish cultivation" lease applicants to include a map or diagram showing the area proposed for lease, which allows applicants to choose their own lease sites.[179] Leases are only available to North Carolina residents.[180] The Marine Fisheries Commission must determine that the leased area is suitable for commercial shellfish harvest, does not contain a natural shellfish bed, and is compatible with other public trust uses of the water such as navigation, fishing, and recreation, as well as the rights of riparian owners.[181] The lease application must then go through a process of public notice, hearing, and comment.[182] Existing shellfish cultivation leases can also be amended to include water columns "superadjacent" to the leased bottom, a process similar to South Carolina's permits for mariculture in pre-existing wild harvest areas, provided that the lease has the least disruptive effect on other public uses of the waters of any available technology to produce the shellfish and is sufficiently distinct from other shellfish beds that can be used for recreational purposes.[183] In 2019, North Carolina

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[175] *Id*.

[176] *South Carolina's Joint Permit*, S. C. Dep't of Natural Res. Marine Res. Div., (last visited Apr. 12, 2021) (links have been unreliable). https://www.pdffiller.com/jsfiller-desk17/?requestHash=451520367f8c1dae3c5e21d486c2484f8bc244c1925e64abe1310640bb31b8a8&projectId=681178765#34fe811b56ab474f99fcc2b42baa1c7d; https://www.sac.usace.army.mil/Portals/43/docs/regulatory/Checklists_NWPs/NWP_48_2012 Checklist.pdf.

[177] S.C. CODE ANN. § 50-5-905 (2000).

[178] N.C. GEN. STAT. ANN. § 143B-289.52 (2017).

[179] Id. §§ 113-202(d-d1). DMF must then investigate the sites.

[180] Id. § 113-202(a).

[181] ID. It is important to remember that riparian ownership property rights are not technically the same as public trust rights, though the two can overlap and intermingle. Confidential Source *#5, supra* note 41; *see also* Sarah Everhart & Danielle Naundorf, *The Oyster vs. the View: Legal Attempts to Hinder Maryland's Shellfish Aquaculture Industry,* 35 ENV'T, ENERGY, & RES., AM. BAR ASS'N 4 (Apr.28, 2021) (finding the confusion between these two rights to be the source of unnecessary conflict and misunderstanding in oyster law).

[182] N.C. GEN. STAT. ANN. § 113-202(f) (2019).

[183] Id. §§ 113-202.1(a)-(c). This provision is also reminiscent of technology-forcing federal environmental laws.

also amended its law to allow the Marine Fisheries Commission to establish "Shellfish Aquaculture Enterprise Areas" (SEAs) for more concentrated water column leasing.[184] All leases and renewals have ten year terms.[185]

Like Florida, North Carolina's leasing system does not envision a situation where two oyster lease applicants propose the same area to lease, so it does not provide for public bidding, auctioning, "draft picks," or a lottery system to distribute leases. DMF evaluates proposed lease sites on a first come, first serve basis, subject to conditions, restrictions, and modifications.[186] The statutory leasing system does, however, envision conflicts between the Shellfish Cultivation Lease Review Committee, prospective leaseholders, and members of the public. As a result of prior experience with these conflicts, the 2019 amendments to North Carolina law established a detailed process and procedure for handling them.[187] The process includes public notice and comment, but the procedure for handling complaints involves an application for a hearing, where an applicant—who may be a prospective leaseholder or member of the public—must show that the Committee's decision on whether or not to grant a lease was (1) contrary to statute or rule; (2) directly affected by the decision; and (3) not frivolous.[188] North Carolina passed its original law allowing water column leases in 2005 and amended the law several times between 2009 and 2019, at the same time experiencing significant growth in the shellfish cultivation industry, particularly with oyster farming.[189] This growth was accompanied by increases in conflicts with other users of the state's public trust waters, as well as complaints from riparian property owners—not technically a public trust right.[190] The recent change in the state law reflects these experiences and also codifies a requirement to not impinge on the "rights of riparian owners" and the "exercise of riparian rights by adjacent property owners."[191] The effect of these changes is not yet clear, but as of 2022, the southern part of the state has a moratorium against new leases.

Shellfish Leases		
Type	**Number**	**Total Acreage**

[184] Id. §§ 113-202(s), 113-202.1(j).
[185] Id. § 113-202(j).
[186] Confidential Source #5, *supra* note 41.
[187] Id.;N.C. GEN. STAT. ANN. § 113-202(g) (2019).
[188] *Id*.
[189] *See* Table 2, *North Carolina Shellfish Permitting and Aquaculture Program*, N. C. Envtl. Quality, http://portal.ncdenr.org/web/mf/shellfish-lease-franchise-programs (last visited Mar. 17, 2022) (showing growth from 0 leases in 2009 to over 100 in 2019, almost evenly split between water bottom and water column).
[190] Confidential Source #5, *supra* note 41.
[191] N.C. GEN. STAT. ANN. §§ 113-202(a)(4), 113-202.1(b)(4) (2019).

Bottom	256	1314.17
Water Column	119	364.96
Franchise	48	512.89
Research	3	5.82
Total	**426**	**2197.84**

Shellfish Lease Applications		
Year	Bottom	Water Column
2009	0	0
2010	1	1
2011	1	1
2012	8	6
2013	6	10
2014	8	7
2015	9	2
2016	10	11

2017	52	46
2018*	36	33
2019	58	48
2020♦	29	25
2021♦	34	29

*Hurricane Florence (September) resulted in fewer applications. ♦COVID-19 and adjusted application due dates resulted in fewer applications.

Figure 3. Shellfish Leases and Lease Growth in North Carolina Oyster Industry[192]

Like North Carolina, Alabama's oyster farming program started to grow around 2009.[193] Alabama has taken a unique approach to managing its growing oyster aquaculture industry, more similar to West Coast states, by offering a competitive bidding system based on appraised land value because of pre-existing state law under the Alabama Land Sales and Lease Act.[194] This competitive bidding can make Alabama's lease sites much more expensive, but the state's industry has also experienced nearly 400 percent growth in its industry in the past ten years, the largest in any state on the Eastern Seaboard by over 150 percent, with Rhode Island being the next closest.[195] Prospective oyster farmers can also lease riparian rights from landowners,[196] and this process seems to have been more popular in Alabama than its neighbors.

Alabama's oyster regulations are managed by the Department of Conservation and Natural Resources (DCNR).[197] While Alabama's statutes provide for the traditional planting and harvesting of wild oysters, Alabama authorizes "shellfish

[192] *North Carolina Shellfish Permitting and Aquaculture Program*, *supra* note 164.

[193] *Alabama Oyster Aquaculture*, Ala. Seafood Mktg. Comm'n, http://alaquaculture.com/permit-application-guide/ (last visited Apr. 28, 2021).

[194] Id.; ALA. CODE § 9-15-70 (1995). This Act applies to state-owned land valued over $20,000: "[l]easing of submerged lands under this provision is subject to a competitive bidding process. Through the services of an appraiser, the Alabama Department of Conservation and Natural Resources – State Lands Division sets the minimum bid and advertises the parcel's availability. Applicants may submit sealed bids, and the lease will be awarded to the highest bidder."

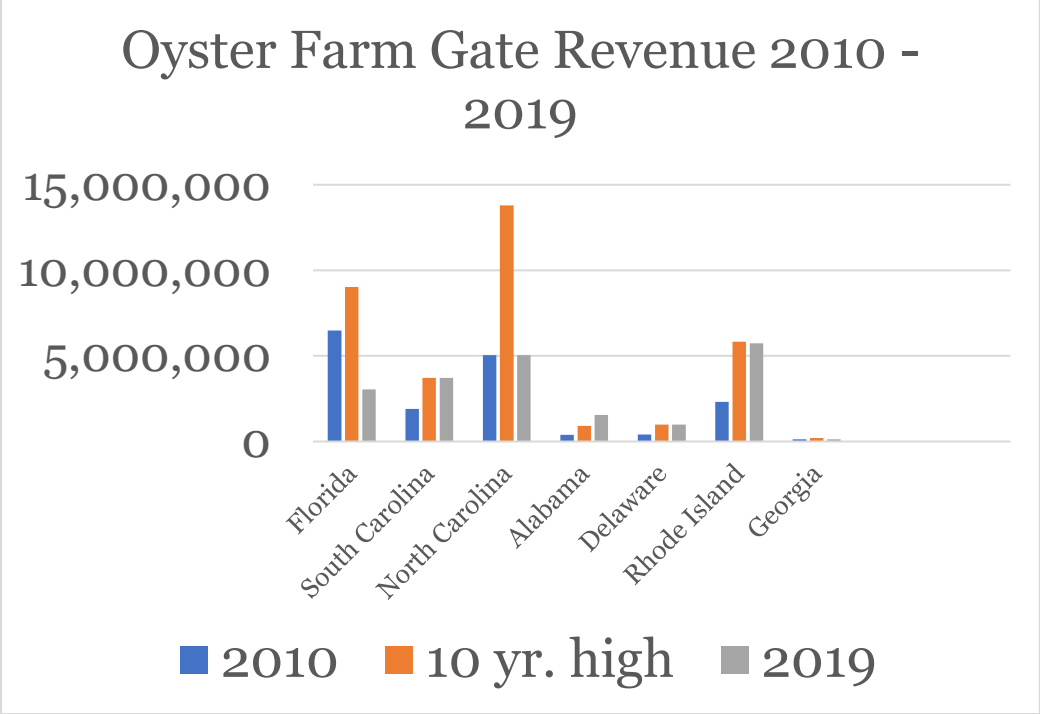
[195] *See* infra Figure 5.

[196] ALA. ADMIN. CODE § 220-4-.17.

[197] ALA. CODE § 9-12-20 (1975).

aquaculture activities" through its regulations using easements, taking care to protect riparian rights, navigation, public shellfish beds, and environmental conservation.[198] These easements are distributed in five-year increments for a maximum of five acres of water bottom.[199] Alabama grants easements for three different types of oyster "catching." "Off-bottom" and "under-pier" farming involve floating cages or bags and often "long-line," walking-in-the-water systems. "On-bottom" farming involves planting oysters on culch but then using farming techniques to monitor them, rather than allowing the oysters to grow completely wild.[200] Alabama's Seafood Marketing Commission also created an attractive website with informational videos for marketing, draft business plans and lease types, and a streamlined, step-by-step permit application process that includes an early interview with the Marine Resources Division and easement application with the State Lands Division.[201] The website also walks the user through the joint federal/state permitting process for ACE and the Alabama Department of Environmental Management, an application for the U.S. Coast Guard, and approval from the state Department of Public Health.

Table 2: Growth in Oyster Landing Revenue by State (Gross Profit to Farmer/Harvester)



198 ALA. ADMIN. CODE § 220-4-.17.
199 *Id.*
200 Ala. Seafood Mktg. Comm'n, supra note XXX.
201 *Id.*

2. Key Comparisons

While South Carolina and Georgia each use the "intertidal" and "subtidal" language[202]—perhaps because the two sister states share the quality of possessing several hundred thousand acres of coastal salt marsh—North Carolina's statutory "shellfish bottom" and "water column" leases also correlate to the intertidal/subtidal distinction. North Carolina's oyster law, however, is more notable in its nearly identical introductory language to that of Georgia. North Carolina's 2009 statutory update begins with the statement that the "General Assembly finds that shellfish cultivation provides increased seafood production and long-term economic and employment opportunities" and also that "shellfish cultivation provides increased ecological benefits to the estuarine environment by promoting natural water filtration and increased fishery habitats."[203] The North Carolina General Assembly further declares it the policy of the state to "encourage the development of private, commercial shellfish cultivation in ways that are compatible with other public uses of marine and estuarine resources such as navigation, fishing, and recreation."[204] The only difference between North Carolina and Georgia's legislative findings is that Georgia includes an additional clause, claiming "that there exists a public health concern when consuming raw or undercooked shellfish, especially during warm water, summer conditions."[205] Georgia's preoccupation with the dangers surrounding summer oysters is not mirrored in any of the other "core corner four" states' statutes.

That key policy language aside, the similarities between Georgia and North Carolina law mostly end. North Carolina allows applicants to choose their own lease sites. As of 2006, the Fisheries Commission must prepare charts of the waters of North Carolina containing the locations of all oyster and clam leaseholds, the locations of all claims or grant of title to portions of the bed under navigable waters registered, and the locations of all areas in navigable waters to which a right of

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[202] S. C. Dep't of Natural Res. Marine Res. Div., supra note XXX.

[203] N.C. GEN. STAT. ANN. § 113-201(a) (2009).

[204] *Id*. *Compare Id. with* GA. CODE ANN. § 27-4-187 (2019): The [Georgia] General Assembly finds that the wild harvest and mariculture of shellfish *provide increased seafood production* and *long-term economic opportunities* for coastal Georgia as well as *increased ecological benefits to the estuarine environment by promoting natural water filtration and increased fishery habitats*. The General Assembly also finds that there exists a public health concern when consuming raw or undercooked shellfish, especially during warm water, summer conditions. Therefore, the General Assembly *declares that it is the policy of the state to encourage development of the commercial shellfish industry* in ways that protect the public health and are *compatible with the environment and with other public uses of the estuarine area, such as navigation, fishing, swimming, and other forms of recreation.*

[205] GA. CODE ANN. § 27-4-187 (2019). Why Georgia included this clause when none of its core corner four states—or any other state for that matter—have such a provision remains a mystery. Confidential Source #3, supra note 37.

private fishery is claimed and registered.[206] As of 2014, North Carolina law allows for an innovative Under Dock Oyster Culture Permit, a form of oyster gardening where the permit holder may attach up to ninety square feet of oyster cultivation containers to an owned dock or pier.[207] These permits are valid for one year and require that the area be free of pollution, otherwise comply with public use and trust, that the owner goes through the required training protocols, and the oysters not be sold. Finally, in 2017, North Carolina amended its law to provide for "marine aquaculture leases" not limited to oysters or shellfish, and requires only that these leases not be permitted on "commercially significant" shellfish beds to ensure the viability of the state's wild resources.[208]

Florida has the most coastline, the most developed permitting system, excellent information resources, a highly efficient water quality monitoring, and most notably, established AUZs.[209] Georgia appears to have noticed this key aspect of Florida's (and now North Carolina's) leasing system. Though these zones are not in Georgia's statute or regulations, CRD appears to be siting subtidal leases in clusters or "harvest areas" in each county. One key difference is that Florida and North Carolina still allow prospective oyster farmers to propose their own sites. Also, one of the main purposes of the zones is to streamline federal and state permitting through ACE "general permits" or joint application processes, neither of which are currently part of Georgia's framework.[210] Alabama, the southeastern state with the most recent business growth, most sophisticated website, and most unique permitting process—especially relative to its mere fifty-three miles of coastline—shares almost nothing in common from a legal or regulatory perspective with its Georgia neighbor. Both states, however, do have advanced marine science communities affiliated with their state Sea Grant institutions on Dauphin and Skidaway Islands, and these facilities provide key research and troubleshooting assistance to their states' industries.[211]

B. Summer Harvest in the Core Corner Four

The Gulf States, with measurably warmer water and arguably more intense summer heat conditions, continue to permit year-round harvest. While Florida's wild-harvesting industry—particularly around Apalachicola Bay—historically operated on a seasonal schedule with the harvesting season closed from May through September, its oyster aquaculture industry does not have a seasonality and is instead tied directly to the water quality in the specific area for shellfish harvesting.[212] Thus, aquaculture leases do not have a season like wild shellfish and can be harvested year-round as long as shellfish harvest areas are not closed due to

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[206] N.C. GEN. STAT. ANN. § 113-206 (2006). Georgia has no such requirement, but perhaps could benefit from one.

[207] N.C. GEN. STAT. ANN. § 113-210 (2014).

[208] Id. § 113-217.

[209] Confidential Source #4, *supra* note 41.

[210] Confidential Sources #4 and #5, *supra* note 41.

[211] Confidential Source #1, *supra* note 34.

[212] Confidential Source #4, *supra* note 41.

poor water quality. Alabama likewise permits year-round harvest, even though, like Florida, Alabama has warmer summer weather and warmer summer water, making the Gulf States much more likely candidates for problems with *Vibrio*.[213] The Gulf States may also have more experience dealing with *Vibrio*, as they have traditionally had more robust or well-known wild oyster industries, particularly in Apalachicola, Florida and Murder Point, Alabama.

In South Carolina, the state code establishes an oyster "season" from September 16 through May 15 of every year, making it unlawful to harvest shellfish during any closed season or from any closed "grounds."[214] South Carolina DNR retains the authority to open or close any area for shellfish taking throughout the year.[215] In 2000, however, state law changed to allow "permit[ted] persons and entities engaged in shellfish mariculture operations to take, possess, and sell maricultured shellfish at any time during the year."[216] In 2017, the law specified requirements for the "privilege" of out-of-season permits to "Shellfish Mariculture Permittee[s]" and imposed additional requirements for them, such as additional shellfish operational plans and training, a list of authorized harvesters and dealers, and other conditions related to species, harvest times, and record-keeping.[217] South Carolina also, however, appears to have very recently introduced new legislation to outlaw summer harvest.[218]

Under the North Carolina Administrative Code, it is unlawful to take or possess oysters from public bottoms except from October 15 through March 31, and these dates represent the traditional North Carolina oyster season.[219] However, these rules do not appear to apply to aquaculture operations, for whom the state has issued recent regulations related to summer harvest to ensure proper shading and cooling of oysters harvested in summer heat.[220] As in almost all states with developed oyster fisheries, the Marine Fisheries Commission is also authorized to close areas of public bottoms under coastal fishing waters for any times as may be necessary to benefit the productivity of shellfish.[221] Even in North Carolina, a state that has

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[213] *Id*.

[214] S.C. CODE ANN. § 50-5-985 (2002).

[215] *Id.*

[216] *Id.* § 50-5-995.

[217] Id.§ 50-5-997.

[218] Chloe Johnson, *Fight over floating oyster farms erupts anew as SC bill could pause summer harvest*,POST AND COURIER (Mar. 5, 2021), https://www.postandcourier.com/news/fight-over-floating-oyster-farms-erupts-anew-as-sc-bill-could-pause-summer-harvest/article_a141a46c-7d1a-11eb-bad1-4311f0d5c4fa.html. It is unclear to what extent the proposed bill is a political tactic or an attempt to bring oyster farmers to the bargaining table. The conflict appears to revolve around navigation and riparian viewshed issues, not health concerns related to bacterial infection, so eliminating summer harvest would not necessarily solve the stated problem.

[219] N.C. ADMIN. CODE 15A 3K.0201.

[220] *New Harvest Control Measures Implemented*, N. C. Envtl. Quality, https://deq.nc.gov/news/press-releases/2020/03/23/new-oyster-harvest-control-measures-implemented (last visited Apr. 28, 2021).

[221] N.C. GEN. STAT. ANN. § 113-204 (1989).

had recent concerns with *Vibrio*,[222] the traditional oyster season does not apply to aquaculture.

While Georgia law created a "special exemption" process for year-round harvest, it does not allow for summer harvest yet, and it appears from the March 2021 meeting of the Shellfish Advisory Committee that it will be slow in doing so.[223] Other southeastern and Gulf states routinely allow for regulated summer harvest even for wild oysters, perhaps recognizing the regulation of the industry and the lessened danger by permitting trained harvesters to utilize modern refrigeration equipment for summer harvesting. In the core corner four states, farmed oysters are generally more regulated than the wild resource, but also more likely to be submerged in floating equipment and manicured by a farmer, making the likelihood of improper handling that could cause bacterial infection even lower.[224] Summer harvest is important to the business viability of the oyster farming industry, and Georgia's reluctance to facilitate this process due to public health concerns not found in other states hampers this aspect of the law.[225]

C. Oyster Seed in the Core Corner Four

As noted above, oyster farming requires "planting" of new oyster seed each year, and the 2019 law allows CRD to approve out-of-state hatcheries and nurseries to import quality seed into Georgia.[226] Oyster seed production begins in hatcheries and nurseries with parent oysters releasing egg and sperm into a marine environment. The fertilized egg becomes an oyster larva, which turns into "spat"—tiny baby oysters—that are the "seed" used by oyster farmers to grow into a marketable product.[227] The most efficient way to procure this seed is directly from a hatchery or nursery and many such facilities exist along the Eastern Seaboard.

South Carolina permits the importation of out-of-state shellfish, shellfish tissues, and shellfish shells, specifies permission for polyploid shellfish, and imposes conditions related to species, testing, disposal, and biosecurity on permittees.[228] Shellfish Mariculture permittees may even acquire a permit to take wild shellfish seed for mariculture.[229] North Carolina law provides for and

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[222] Allison Ballard, *N.C. man dies from eating contaminated oysters*, Star news Online (Sept. 28, 2019), https://www.starnewsonline.com/news/20190928/nc-man-dies-from-eating-contaminated-oysters.

[223] CRD is partnering with UGA to conduct a year-long study to establish a *Vibrio* baseline in Georgia waters, basing its study on a similar study conducted in South Carolina in 2016, prior to opening summer harvest in 2017.

[224] Interview with Bob Rheault, *supra* note 51.

[225] Id.

[226] GA. CODE ANN. § 27-4-203(b) (2019). The 2020 regulations also specifically require that all hatcheries and nurseries providing shellfish seed to a leaseholder—whether in-state or out-of-state—receive certification from CRD. GA COMP. R. & REGS. 391-2-4-.18(5)(a).

[227] *Georgia Perfects the Lonely Oyster*, SAVANNAH NOW, https://www.savannahnow.com/article/20160116/NEWS/301169826 (last visited Feb. 12, 2021).

[228] S.C. CODE ANN. § 50-5-1005 (2017).

[229] Id. § 50-5-945.

designates Seed Oyster Management Areas and Oyster Sanctuaries,[230] as well as Aquaculture Seed Transplant Permits to move seed oysters from management areas to aquaculture lease areas.[231] Florida raises its own oyster seed and will probably be the main supplier for Georgia.[232] In 2018, Alabama began to transition its industry from oyster seed hatched at Auburn University's Shellfish Lab on Dauphin Island to private industry.[233] States from Maryland to Mississippi likewise have their own hatchery facilities, either in private industry or run through state and federal programs, such as Sea Grant. On Skidaway Island, the University of Georgia currently operates the state's one and only in-state hatchery.[234] As the industry develops, oyster farmers may need access to additional seed, or private hatcheries may enter the Georgia market.[235] One additional concern is the use of triploid—as opposed to diploid—seed that does not reproduce naturally and also grows much more quickly. Triploid seed can cause problems with the natural seed population, if not properly tested. More information or research may be important on this situation.

D. The Truth is Out There: Key Aspects of Other Regional Programs

Other non-"core corner four" states have an even more distinctive story to tell. The oyster population in neighboring Mississippi, a state with a significant oyster industry, suffered a 90% loss in its oyster resource in 2019 after ACE opened a spillway upstream from New Orleans to relieve pressure on the levees, forcing the state to close wild oyster harvest through 2021.[236] The oyster resource was already in decline after Hurricane Katrina and the Deepwater Horizon oil spill.[237] The Division of Marine Fisheries is working to replant wild oysters and rebuild reefs but also develop the oyster farming industry, permitting its first aquaculture season in 2019. Mississippi's industry is limited to a unique hands-on educational program in an oyster aquaculture "park" located on Deer Island, off the coast of Biloxi.[238] The program is accepting twenty applicants per year with the goal of rebuilding Mississippi's oyster industry. The program also offers a separate twenty-five-

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[230] N.C. ADMIN. CODE 15A 3R.0116-.0117.

[231] *Id*.

[232] Confidential Source #4, *supra* note 41.

[233] Alabama Shellfish Aquaculture Situation and Outlook Report 2018*,* Alabama Extension, https://alaquaculture.com/assets/2019/10/Alabama-Shellfish-Aquaculture-Situation-and-Outlook-Report-With-Survey-2018.pdf (last visited Apr. 28, 2021).

[234] *Oyster Hatchery, supra* note 107.

[235] Other concerns, such as the hatching of triploid seed that does not spawn and reproduce, are also important considerations that are being addressed in other states and will likely need to be addressed in Georgia as well.

[236] *Mississippi Fishing Industry Hopes to Recover from Decimated Oyster Population*, THE MERIDIAN STAR (Mar. 5, 2021), https://www.meridianstar.com/news/local_news/mississippi-fishing-industry-hopes-to-recover-from-decimated-oyster-population/article_172a8aa9-f298-5991-b331-f0a17c1d548a.html.

[237] *Id*.

[238] *Deer Island Commercial Aquaculture Park*, Div. of Marine Fisheries, https://dmr.ms.gov/deer-island-commercial-aquaculture-park/ (last visited Apr. 28, 2021).

person class in Oyster Farming Fundamentals for off-bottom aquaculture that includes everything from hatching oysters to farming equipment to business and marketing plans.[239] The class culminates by giving the participants 10,000 oyster seeds and the opportunity to farm them using state equipment on location at Deer Island Oyster Park.

Louisiana, like Florida, is famous for its wild harvested oysters, as well as their place in the French Creole cuisine of New Orleans. However, Louisiana's oyster industry suffered a significant setback when the State and Department of Natural Resources received a $1 billion judgment against them and in favor of the State's oyster farmers for loss in oyster lease value due to State conservation efforts that lowered salinity levels in its coastal waters.[240] The verdict was eventually overturned on procedural grounds that avoided the constitutional takings and inverse condemnation claims, though the Louisiana Supreme Court used considerable ink in dicta to analyze those claims and point out the legitimacy of interests on both sides.[241] The legislative and agency response to the original verdict was a moratorium that reduced the State's vulnerability to litigation but did not address the problem of balancing the public and private interests in the management of coastal wetlands and the associated oyster resource.[242] Perhaps the most important lesson to be "gleaned" from *Avenal* is that "careful, measured planning by the legislative and executive branches serves the public and private individuals far more effectively than relying on the courts to sort out the priorities among the many, varied users of the coast.[243]

On February 3, 2021, the Louisiana Division of Wildlife and Fisheries announced a five phase process for lifting the moratorium based on new rules and regulations approved by the Louisiana Wildlife and Fisheries Commission in collaboration with the Louisiana Oyster Task Force, the Attorney General's Office, the Office of State Lands, Oil and Gas firms, and private landowners in August 2019.[244] The phased approach involves reviewing lease applications, granting *Avenal* class-action plaintiffs right of first refusal, expanding leases into adjacent water bottoms, and two lottery phases for new leasing to the general public.[245] Louisiana oyster leases are typically used like other Gulf "on-bottom" leases where

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[239] *Off-Bottom Oyster Aquaculture Training Program*, Div. of Marine Fisheries, https://dmr.ms.gov/deer-island-commercial-aquaculture-park/ (last visited Apr. 28, 2021).

[240] Rebecca Bond Costa, *A Self-Inflicted Wound": The Impact of Coastal Erosion and Restoration on Louisiana's Oyster Industry.* 1 S. CULTURES 24, 27–45 (2018).

[241] Avenal v. State, 886 So.2d 1085 (La. 2004) (reversing and dismissing $1 billion jury verdict in favor of oyster farmers due to "hold harmless" clauses in state oyster lease contracts and statute of limitations for claims, reasoning the State had the authority and duty to protect public trust waters with conservation efforts). Another property-related oyster decision was recently handed down by the United States Court of Federal Claims but is beyond the scope of this paper. *See* Campo v. United States, Nos. 20-44; 20-47; 20-55 (Dec. 23, 2021) (West 2022).

[242] Costa, *supra* note 211, at page XX.

[243] *Id*.

[244] Rene LeBreton, *LDWF Announces Process to Lift Oyster Moratorium*, Louisiana Division of Wildlife and Fisheries, https://www.wlf.louisiana.gov/news/ldwf-announces-process-to-lift-oyster-moratorium (Feb. 3, 2021).

[245] *Id*.

oyster spat or seed is cultivated into reef habitat by the leaseholder. Current leaseholders, however, may now also apply for an Alternative Oyster Culture Permit to farm oysters on their leased area using a variety of cage, rack, bag, and "long-line" methods, and this application must meet similar conditions to those imposed by other states, though it also requires specific renderings of how and where equipment will be used.[246] Notably, Texas, a state that also had a recent moratorium on leases, passed recent legislation and appears to be developing a similar program that allows applicants to propose their own sites that will be reviewed for environmental factors and put up for public comment in the closest town or municipality.[247]

The Chesapeake Bay holds its own allure amidst a vibrant fishing industry and a history of both unparalleled growth and conflict, much of which is beyond the scope of this paper. Virginia boasts the second highest oyster "landings" value in the past decade, just behind Louisiana.[248] In Virginia, applicants also submit their own proposed area to lease, and leases can be used for wild harvest, cultivation, or farming. With over 7,000 miles of tidal bay, the Virginia Marine Resources Commission "strongly encourages" any form of oyster gardening or farming and outlines simple, specific processes for each form, whether recreational, a new commercial aquaculture lease, or adding oyster farming to a pre-existing permit.[249] However, Virginia has experienced significant user conflicts, particularly along the historic Lynnhaven River, due to concerns surrounding losses in property value and scenic views, and the attempts to mitigate these conflicts have shown limited results.[250]

Similarly, Maryland—a state perhaps better known for its blue crabs—has a vibrant oyster fishery, but not one without conflict. The difference in Maryland is that the conflict typically comes from within the fishery community itself, either because of interference with other fishery locations or competition between the wild oyster fishery and the advent of oyster farming.[251] Both Maryland and Virginia

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[246] *Alternative Oyster Culture*, Louisiana Division of Wildlife and Fisheries, https://www.wlf.louisiana.gov/page/alternative-oyster-culture (last visited Apr. 28, 2021).

[247] Cliff White, *Texas launches oyster mariculture program while Florida closes Apalachicola oyster fishery,* SEAFOODSOURCE, (Oct. 2, 2020) https://www.seafoodsource.com/news/aquaculture/texas-launches-oyster-mariculture-program-while-florida-closes-apalachicola-oyster-fishery; *Oyster Aquaculture Submerged Lands Fact Sheet: Texas*, https://masglp.olemiss.edu/projects/oysteraquaculture/files/oasl.fact.sheet.texas.pdf (last visited Apr. 28, 2021); *Oyster Mariculture in Texas: FAQs*, https://tpwd.texas.gov/fishboat/fish/commercial/com_cf/faqs.phtml#GI2 (last visited Apr. 28, 2021).

[248] The fact that Louisiana boasts such a high farmgate oyster "landings" revenue given its moratorium on new leases is remarkable but also a discussion beyond the scope of this paper.

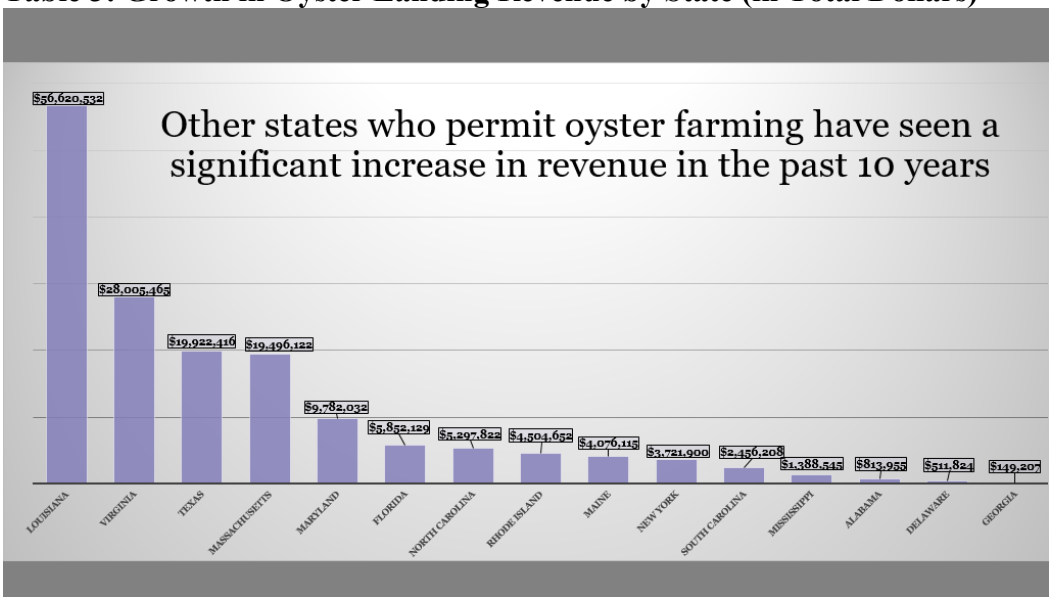
[249] *Shellfish Aquaculture, Farming, and Gardening*, Va. Marine Res.Comm'n, https://mrc.virginia.gov/Shellfish_Aquaculture.shtm (last visited Apr. 28, 2021).

[250] *See* Elizbeth Andrews & Angela King, *Managing Use Conflicts on the Lynnhaven River*, OVERCOMING IMPEDIMENTS TO SHELLFISH AQUACULTURE THROUGH LEGAL RESEARCH AND OUTREACH: CASE STUDIES, Va. Coastal Pol'y Center (2018).

[251] *Oyster Aquaculture and Restoration*, Md. Sea Grant, https://www.mdsg.umd.edu/topics/oysters/oyster-aquaculture-and-restoration (last visited Apr. 28, 2021).

remain committed to the continuing restoration of the Chesapeake Bay, recognizing that oyster habitat stands to benefit all of the Bay's fisheries, but user conflicts remain the key issues in those states, not the status or details of legislation and regulation.[252] These conflicts have also trickled down to North Carolina and South Carolina, and Georgia will need to continue to monitor their cause and effect to determine what appropriate measures should be taken to better preempt or address these issues.

Table 3: Growth in Oyster Landing Revenue by State (in Total Dollars)



VI. Get Back in Your Shell: Concluding Thoughts as Georgia Grows Out

Georgia's regulatory scheme is not a completed project—the framework continues to evolve. At the March 2021 Meeting of CRD's Shellfish Advisory Council, CRD unveiled its priority point system for the subtidal lease lottery and requested public comment on its clustered use zones or "harvest areas" for subtidal leases in the Mud River Mariculture Zone. CRD issued the first of these leases in June 2021, accompanied by a more robust Shellfish Policy Manual in May.[253] Three new leases have been issued in a Savannah mariculture zone in 2022, with hopes for more siting of mariculture zones and intertidal mariculture leases soon. CRD continues to communicate with its corollaries in Florida, Alabama, South Carolina, and North Carolina and hopes to avoid the litigation, user conflicts, and industry frustrations experienced in those states with the shared goal to create safe and sustainable entry into the oyster farming industry. The interstate Shellfish Mariculture Network also meets regularly to discuss industry updates and issues and held its first annual conference in Athens, Georgia in May of 2022.[254] Other

[252] *See e.g.*, Everhart & Naundorf, *supra* note 160.
[253] *See* SHELLFISH POLICY MANUAL, *supra* note 84.
[254] Confidential Source #1, *supra* note 34.

state programs continue to shed light on what works in the sustainable oyster farming industry, and it remains to be seen whether and how Georgia will grow in its own form and/or adapt to its own challenges in more traditional or unique ways.

First, though nearly all southeastern states—particularly the "core corner four" neighbors to the northeast and southwest—allow prospective lease applicants to submit their own proposed lease areas, Georgia law and regulations do not currently permit applicants to select their lease own sites or even select sites within Georgia's statutory "approved growing areas" for oysters. Instead, Georgia law requires a bidding system for intertidal leases, which will primarily involve wild harvest—though oyster farming may increase in these areas—and a lottery system for subtidal leases, where only farmed oysters will be grown.[255] Lotteries, though popular with fish and wildlife permitting operations in some states, including Georgia, are also very rarely used in other states for oysters, and then only when anticipating high demand, such as after moratorium interruption in Louisiana or Texas, or simply as a "draft pick" system that establishes a queue in the somewhat rare event that multiple people apply for the same site on the same day, as in South Carolina, a state that has never used the lottery system on its books.[256] At this very moment, however, no other southeastern or Gulf State uses a lottery system, and no state plans to use a lottery system permanently. Georgia's adoption of a lottery system with a 'select your own site' option is perhaps the most unique feature of its oyster farming regulations and the biggest question mark moving forward, given that no other state is set up this way.

Second, the growing trend toward oyster farming or mariculture "zones"—pioneered by Florida, recently adopted by North Carolina, and even seen in Mississippi's industry revitalization "oyster parks"—makes good sense, especially as a means to avoid user conflicts. In other states, zones usually exist alongside systems that allow applicants to propose their own lease sites. Zones can also be complemented by joint state and federal permitting, streamlined application systems, and comprehensive public notice requirements. Use zones in conjunction with these other mechanisms may create real potential to generate fewer user conflicts in public trust waters. Georgia's attention to this trend may prove a prudent move, especially if it can capitalize on all the benefits. Still, user conflicts may prove to be as inevitable on water as they are on land in the average rezoning procedure.

Next, summer harvest should be permitted as soon as possible. While CRD's new Shellfish Policy Manual establishes a permit for summer harvest, the red tape remains with a forthcoming "feasibility" study and a vaguely worded policy.[257]

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[255] *See* SHELLFISH POLICY MANUAL, *supra* note 84.

[256] Interview with Bob Rheault, *supra* note 51.

[257] A master harvester seeking permission must submit: (1) an approved closed season shellfish operation plan that "meets requirements established by the board to be protective of public health"; (2) a list of all trained harvesters; and (3) a list of receiving certified firms. When deciding whether a master harvester can harvest during "closed" season, Georgia law requires CRD to consider the individual's past compliance with state mariculture law and reserves the right to suspend or revoke closed season harvest permission for violation of conditions. If the master harvester meets these requirements, CRD has created an official Closed Season Harvest Permit

Harvesting farmed oysters year-round when substantial state regulations, including those adopted under the NSSP's Model Ordinance, already provide for shellfish sanitation should be as straightforward as it is in states with oyster farming industries across the country (and much warmer weather). Dangers due to *Vibrio* certainly exist, but sensible precautions can be enacted without creating unnecessary public health apprehension when a scientific consensus exists on how to control the risks. No other oyster farming state prohibits summer harvest.

Other basic concerns also exist. For example, it is unclear how Georgia will obtain sustainable access to quality oyster seed if not from the UGA hatchery, and whether any imported seed will be permitted in diploid or triploid form, a real and difficult sustainability question. Georgia recently approved its first out-of-state hatchery for importation from Florida, so if the market moves out-of-state for seed, the UGA hatchery may be able to devote its time and attention to developing genetics, working with equipment, and starting training programs for potential farmers. Also, the actual relationship between intertidal and subtidal leases with regard to oyster farming remains to be seen, such as the possibility of expanding pre-existing intertidal wild harvest leases to include oyster farming, as many core corner four states do. Georgia's current lottery system encourages those interested in the subtidal lease market without any mariculture experience to gain experience via intertidal leases, even though these leases are more labor intensive and less economically viable.

Relatedly, more research should be done on the relationship between residency requirements for oyster farming leases and rational basis review under relevant constitutional law, especially when these leases do not involve harvesting the wild oyster resource, as is the subtidal situation in Georgia.[258] The residency issue is also relevant to intertidal leases, where the State flatly discriminates against out-of-state residents, because those leases may become the locus of both farmed and wild oysters at the same time. From an environmental perspective, subtidal leases could be justified on the grounds of protecting the natural oyster resource. Even so, the state may not have a rational reason to discriminate against out-of-state citizens in issuing subtidal leases. Doing so with a fungible article of interstate commerce—a single, farmed oyster that never lived on a natural oyster reef—may not be enough to pass constitutional muster.

Given that no law was ever passed perfectly and the threat of legal challenges looms, the overriding policy concern with Georgia's oyster law remains collaborative, informed decision-making.[259] In studying Louisiana's pivotal *Avenal* case, Rebecca Costa may have been prescient when she stated that the most important lesson to be "gleaned" is that "careful, measured planning by the legislative and executive branches serves the public and private individuals far more effectively than relying on the courts to sort out the priorities among the many,

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that "*may be authorized according to Board rules and regulations*." SHELLFISH POLICY MANUAL, *supra* note 84, at 3.

[258] *See infra Appendix* for an attempt to highlight the relevant legal issues and caselaw.

[259] *See* Harris, *supra* note 24 (authoring Coastal Marshlands Protection Act).

varied users of the coast."[260] It remains to be seen what Georgia can do with the opportunity it is creating for itself in terms of business and resilience. As they say, the world is our oyster.

Appendix A: Shellback to School – Legal Questions and Constitutional Concerns

I. Introduction

At least four federal or constitutional issues potentially arise when states impose residency requirements or otherwise discriminate against out-of-state United States citizens when regulating natural resources, fish or wildlife: (1) federal law preemption under the Supremacy Clause; or (2) conflict with the Commerce or Dormant Commerce Clause; (3) Privileges and Immunities Clause; or (4) Equal Protection Clause. With regard to Supremacy, if Congress has acted on the specific issue at hand by passing a federal law, this law normally is the most straightforward way for courts to resolve the issue, and so long as the law does not otherwise violate the Constitution, courts will uphold it and allow it to preempt state law or regulation in the same arena. If the matter is clearly related to a commodity or article of commerce, the Commerce Clause will govern. This analysis, however, can be complicated with wild or natural resources that have not yet been harvested, and courts have found that while the Commerce Clause may apply, especially in its Dormant form, the analysis is more straightforward under the Privileges and Immunities Clause. Likewise, clearly discriminatory laws and regulations can be more easily adjudicated under the Equal Protection Clause. Notably, even if courts do not make a decision on the Commerce Clause, they may use a Dormant Commerce Clause type of analysis, to determine whether states can legally regulate in a given realm, given relevant federal law, Privileges and Immunities, or Equal Protection considerations. This analysis often considers the discriminatory nature of the state action and whether or not it was clearly or reasonably related to a valid state concern, such as conservation or preservation of a wild or natural resource, and not simply an attempt to exclude out-of-state interests. For the purposes of the analysis in this section, questions under the Equal Protection Clause and whether administrative decisions and regulations are arbitrary, capricious, or contrary to law will not be examined because the Supremacy, Commerce, and Privileges and Immunities issues also overlap with these concerns.

II. Background and Purpose

Wild oysters have actually always been at the forefront of this part of American law, along with other state fisheries and wildlife like crabs, lobsters, shrimp, "surfclams," and finfish. Each of these fisheries has a unique set of rules and considerations, but wild oysters are perhaps the most unique because they are

[260] *See* Costa, *supra* note 211.

sedentary and often harvested on tidal banks and water bottoms, not always in clearly navigable waters subject to federal regulation. States traditionally have the right to control and regulate these wild oyster fisheries under common law and public trust doctrine, though these doctrines also overlap with federal regulations governing fisheries in deeper territorial waters, as well as offshore waters subject to federal admiralty law. Farmed oysters, however, are grown in cages, sometimes adjacent to shore but more commonly in floating devices just offshore, and they are not attached to wild oyster beds or even grow in clumps like wild oysters at all. Rather, they are farmed from seed to be "singles," more like a traditional agriculture product like corn or peanuts or pine trees—only in the water, not a field or garden.

Legally speaking, it is not clear if these oysters are even a wild resource, although they are overwhelmingly regulated by state natural resources or wildlife divisions.[261] The oyster farming business and technology is also relatively new and raises new constitutional considerations. Because of its unique status between wild resource and agricultural product, and the fact that federal constitutional law under the relevant clauses does not often draw bright lines but instead tends to analyze each case and situation on its given facts and circumstances under a rational basis review, oyster farming merits a second look, and a better guess at how the legal rules might apply to it. This memo seeks to offer such a basic legal analysis.

A. Federal Preemption and the Dormant Commerce Clause: A Brief Legal Analysis

While the Dormant Commerce Clause's negative constraint upon the States is intended to prevent the enactment of discriminatory laws against nonresidents, "it is only operative when Congress is silent on" the relevant issue.[262] Accordingly, where Congress has acted, as in the Reaffirmation of State Regulation of Resident and Nonresident Hunting and Fishing Act of 2005 (Reaffirmation Act), no Dormant Commerce Clause challenge exists.[263]

Even if the Reaffirmation Act authorizes state residency requirements for fish and wildlife leases and permits that might otherwise violate the Dormant

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[261] Farmed oyster are grown in states' public trust waters, so in this way, they *use* a state resource even if they somehow are no longer a resource themselves.

[262] Dairy v. Bonham, 2013 WL 3829268 at *3–4 (N.D. Cal. 2013) (holding that "the congressional authorization to the States embodied in Reaffirmation Act of 2005 expressly *allows* the State to discriminate between residents and nonresidents: in order to remove the threat to regulation posed by Dormant Commerce Clause challenges, reasoning the Reaffirmation Act applied to the allocation of crab trap tags because the statute on its face authorizes the States to regulate "the taking of fis . . . for any purpose," which included the "availability of licenses or permits").

[263] *Id*. at *2; *see also* Aqua Harvesters, Inc. v. New York State Dep't of Envtl. Conservation, 399 F. Supp. 3d 15 (E.D. NY 2019) (finding state laws establishing boat and residency requirements did not violate the Dormant Commerce Clause, Privileges and Immunities Clause, or Equal Protection Clause because Plaintiffs could not show irreparable harm caused by residency requirement, particularly because boat requirement issues were lawful and sufficient and therefore negated residency issues, but also reasoning that the federal Reaffirmation Act that reiterated states' rights to control their wildlife and fisheries precluded Dormant Commerce Clause challenges to state laws that govern commercial fishing).

Commerce Clause, in situations involving federal and state jurisdiction issues in navigable waters, the question of whether federal jurisdiction precludes state law still requires a rational basis review analysis under the Dormant Commerce Clause. In *Douglas v. Seacoast Products*, the Court noted that while *Gibbons* is often touted for its expansion of the reach of the federal Commerce Clause, it also reserved substantial rights for states regarding navigable waters and began a long line of cases dealing with conflicting federal and state laws in shared waterways and the corresponding questions of when and where federal law preempted state law.[264] The Court found that the plaintiff's federal fishery licenses preempted Virginia statutes because they "subject[ed] federally licensed vessels owned by nonresidents or aliens to restrictions *different* from those applicable to Virginia residents and American citizens."[265] The Court reasoned that federal fishery licenses included the right to take fish in state waters, "subject to valid state conservation regulation," which must be "reasonable" in that it was equally applied to residents and non-residents and argued that the conservation requirements at issue were not reasonable because not equally applied.[266] The Court rejected Virginia's laws limiting the amount of "catch" taken and type of gear used by non-residents as invalid because a "statute that leaves a State's residents free to destroy a natural resource while excluding aliens or nonresidents is not a conservation law at all."[267]

To contrast, state fishing and regulations for conservation or environmental protection that are applied equally to all citizens both pass constitutional muster and may not be preempted by federal law or regulation.[268] Before turning to the Privileges and Immunities Clause, it is worth noting that Georgia has dealt with DOA issues under the Commerce Clause with a traditional crop. The old Fifth Circuit held unconstitutional a DOA rule "whereby non-residents of Georgia [were] assigned to inferior sales locations at the Georgia State Farmers Market in Columbus, Georgia, [] during periods of crowded conditions."[269] The giving of inferior farmers markets stalls to out-of-state residents was impermissible because

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[264] Douglas v. Seacoast Prod's, Inc., 431 U.S. 265 (1977).

[265] *Id*. at 286 (emphasis added).

[266] *Id*. at 282, 286–87.

[267] *Id*. at n.21.

[268] *See, e.g.*, White Dove, Inc. v. Dir. of Div. of Marine Fisheries, 380 Mass. 471, 478–79, 403 N.E.2d 1169 (1980) (indicating, in dicta, that the State's regulation, which only allowed vessels that caught tuna using purse seine nets prior to 1974 to continue to do so, was not preempted because the regulation did not provide preferential treatment to in-state residents and the prevention of overfishing is within the State's police power); *see also*, Aqua Harvesters, Inc. v. New York State Dep't of Envtl. Conservation, 399 F. Supp. 3d 15 (E.D. NY 2019) (holding that traditional boat type and size used in wild surfclam fishery was a reasonable regulation not clearly meant to discriminate against out-of-state industry). *But see* Tangier Sound Watermen's Assoc. v. Douglas, 541 F. Supp. 1287, 1306 (E.D. Va 1982) (holding that a Virginia law that *only* barred out-of-state residents from harvesting blue crabs in Chesapeake Bay was preempted by federal fishery licenses and also violated the Privileges and Immunities Clause).

[269] Smith v. Dep't of Agriculture of State of Georgia, 630 F.2d 1081,1082 (5th Cir. 1980) (finding the regulation at issue imposes an impermissible burden on interstate commerce, reasoning that every farmer and every craftsman should be encouraged to produce by the certainty that he will have "free access to every market in the nation" and that "no home embargoes will withhold his exports").

those farmers had a constitutional right to sell their crop on equal footing in interstate commerce. Notably, the crops were presumably with the farmers in market, distinguishing this case from *Tangier*, where wild crabs had not yet been harvested for sale, which the Court there found to be a thornier issue.

If farmed oysters are not a wild resource but a farmed product, one issue might be determining at what point in the farming or growing process states can discriminate against out-of-state farmers. Perhaps states may discriminate against out-of-state oyster farmers by regulating the leases they receive, but they probably cannot discriminate against these farmers once they have brought those farmed oyster products to "market." An intermediary issue might be the sorting, processing, and transporting facilities whereby farmed oysters are being prepared for market on docks or boats in federal waters, as well as facilities in multiple states with trucks clearly crossing state lines. Either way, *Douglas* and *Tangier* indicate the state better have a rational basis for excluding out-of-state participants.

B. Oysters and the Privileges and Immunities Clause: A Brief Legal History

Tangier recognized that the Privileges and Immunities Clause followed a winding path from early iterations in *Corfield v. Coryell*,[270] where states were arguably granted ownership of the oyster beds and water bottoms within their territorial boundaries and seas.[271] In a landmark decision, the Supreme Court addressed the issue of whether Virginia could prohibit citizens of other states from planting oysters in Virginia's tidal waters when its own citizens were granted such a privilege.[272] There, the Court held that "each State owns the beds of all tidewaters within its jurisdiction, unless they have been granted away" and even that "the States own the tidewaters themselves, and the fish in them, so far as they are capable of ownership while running."[273] The Court also held that Virginia could preclude non-citizens from engaging in the oyster-producing trade on Virginia beds despite the Privileges and Immunities Clause because that clause simply did not invest citizens of one State "with any interest in the common property of the citizens of another State" and they therefore could be excluded.[274]

Eventually the Court stepped back from this strong claim of ownership, first in dissent in *Geer v. Connecticut*,[275] and later with Justice Holmes holding that "(t)o put the claim of the State upon title" is "to lean upon a slender reed."[276] Later, in *Douglas*, the Court put a modern spin on those views expressed in *Geer* and *Holland*, arguing that:

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[270] 6 Fed.Cas. 546 (C.D.E.D.Pa. 1829).
[271] *Tangier*, 541 F. Supp. at 1295.
[272] McCready v. Commonwealth, 94 U.S. 391, 394 (1877).
[273] *Id*.
[274] *Id*. at 395.
[275] Geer v. Connecticut, 161 U.S. 519, 539–40 (1896).
[276] Missouri v. Holland, 252 U.S. 416, 434 (1920).

> [A] State does not stand in the same position as the owner of a private game preserve and it is pure fantasy to talk of "owning" wild fish, birds, or animals. Neither the States nor the Federal Government, any more than a hopeful fisherman or hunter, has title to these creatures until they are reduced to possession by skillful capture. The "ownership" language of cases . . . must be understood as no more than a 19th-century legal fiction expressing "the importance to its people that a State have power to preserve and regulate the exploitation of an important resource.[277]

The "modern" issue, the Court reasoned, was simply whether the State exercised its police power in conformance with federal law and the Constitution.[278]

The Court also qualified this understanding in subsequent decisions, noting '"the importance to its people that a State have power to preserve and regulate the exploitation of an important resource."'[279] In a separate case that same year, Alaska had argued that "the privileges and immunities clause did not apply, and was never meant to apply, to decisions by the states as to how they would permit [] the use and distribution of" their natural resources.[280] The Court held that "[r]ather than placing a [state] statute completely beyond the Clause [as *McCready* had held], a State's ownership of the property is a factor—although often the crucial factor—to be considered in evaluating whether the statute's discrimination against noncitizens violates the Clause."[281]

"[T]he dilution of the "ownership" theory has been such that in the Court's analysis of a statutory scheme, "ownership" of a natural resource is but one factor that the Court must consider in determining whether a State has exercised its police power in conformity with federal laws and the Constitution."[282] In another pivotal case, the Supreme Court considered the constitutional validity of several South Carolina statutes governing the commercial shrimp fishery, including a licensing system whereby South Carolina charged a much higher fee for nonresidents than for residents.[283] The Court found that the State did retain an interest in its fishery, even in deeper waters subject to federal jurisdiction, such that the State could

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[277] Douglas v. Seacoast Prod's, Inc., 431 U.S. 265, 284 (1977).

[278] *Id*. at 284–85.

[279] Baldwin v. Montana Fish and Game Comm'n, 436 U.S. 371, 386 (1978) (reasoning the fact that the State's control over wildlife "is not exclusive and absolute in the face of federal regulation and certain federally protected interests does not compel the conclusion that it is meaningless in their absence"), citing Toomer v. Witsell, 334 U.S. 385, 402 (1948).

[280] Brief for Appellees at n.14, Hicklin v. Orbeck, 437 U.S. 518, 528 (1978).

[281] *Hicklin*, 437 U.S. at 528..

[282] *Tangier*, 541 F. Supp. at 1294 (arguing that the *McCready* and *Douglas* opinions, as refined by the Court's other decisions, set the bounds within which the proper rule must lie for state statutes to "satisfy the standards of the several applicable constitutional clauses at issue" in fish and wildlife state territories, whether the resource be sedentary oysters, migratory crabs, or swimming finfish).

[283] *Toomer*, 334 U.S. at 387–96 (reasoning the Privileges and Immunities Clause is not an absolute in that while "[i]t does bar discrimination against citizens of other States where there is no substantial reason for the discrimination beyond the mere fact that they are citizens of other States . . . it does not preclude disparity of treatment in many situations where there are perfectly valid [and] independent reasons for it").

regulate the industry but within constitutional confines.[284] The Court decided that "the inquiry in each case must be concerned with whether such reasons do exist and whether the degree of discrimination bears a close relation to them," essentially rational basis review under the Commerce Clause, with deference to the States for local problems and remedies.[285]

Toomer is now largely the standard with regard to fisheries, wildlife, and natural resources. The test is twofold: (1) the first question is whether the State statute is discriminatory on its face; if it is, then (2) the next question is whether the State's reason for the statute is closely and reasonably related to its purpose. As in many cases involving wildlife and fisheries, the Court noted that "there was no reasonable relationship between the danger presented by non-citizens as a class and the severe discrimination practiced upon them. The fact that some of the fishermen were nonresidents was not the 'peculiar source of evil;' the alleged evil was resource depletion whatever the residence of the fishermen."[286] As in *Douglas*, a state can't discriminate against out-of-staters when in-staters are depleting the same resource.

However, *Toomer* also importantly changed *McCready*. After noting the *McCready* rationale in "ownership theory" fiction, "the Court distinguished *McCready* as dealing with sedentary oysters that would remain in Virginia until removed by [people,] whereas *Toomer* dealt with migratory free-swimming fish" in interstate waters.[287] "The Court also noted that *McCready* involved the regulation of inland waters whereas *Toomer* involved regulation of the [territorial] sea."[288] "The Court recognized that despite the language in *McCready* stating it was not dealing with 'a mere privilege or immunity,' *McCready* 'might be taken as reading an exception into the Privileges and Immunities Clause'"[289] based on the ownership theory, finding "ownership was a weaker prop for deep-sea shrimping and "the whole ownership theory, in fact, is now generally regarded as but a fiction expressive in legal shorthand of the importance to its people that a State have power to preserve and regulate the exploitation of an important resource."[290] The Court found no conflict between vital policy considerations and the constitutional command that the State exercise its powers in a way that does not "discriminate without reason against citizens of other States."[291]

C. Discussion and Conclusion: Oysters on the Half-Shell Anyone?

Georgia's recent oyster law raises at least one key legal question with reason for constitutional concern. The issue is whether CRD's point-based lottery system is unconstitutional because it is not rationally related to a legitimate state purpose,

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[284] *Id.* at 393–94.
[285] *Id*. at 396.
[286] *Tangier*, 541 F. Supp. at 1296(citing *Toomer*, 334 U.S. at 385).
[287] *Tangier*, 541 F. Supp. at 1296.
[288] *Id*.
[289] *Id*. (citing *Toomer*, 334 U.S. at 401).
[290] *Toomer*, 334 U.S. at 402.
[291] *Tangier*, 541 F. Supp. at 1287.

such as conserving a state resource. Georgia's leasing framework requires state preference for intertidal leases where farmers can harvest wild oysters or practice mariculture and prefers state citizens for subtidal leases that will only be used to raise a farm-based oyster crop that is not part of the state's wild resource. The subtidal lottery's point system is allegedly based on other systems DNR uses for wildlife management, but these farmed oysters may not technically be wildlife. Though farmed oysters currently have a "season" in Georgia, this season is not intended to preserve a state resource but to protect public health, an already questionable prerogative given the science and probably not rationally related to the way the leases and lottery are devised. Preferring state citizens for leases may be problematic if done at all under constitutional clauses but giving state citizens a nearly 15 percent boost on a limited number of leases might also be "arbitrary and capricious." The fact that South Carolina, North Carolina, and other states have a state residency requirement does not alleviate the legal concern and perhaps amplifies the need for further legal research, given that many these states have also built their oyster farming laws out of pre-existing wild harvest rules, rather than adopting completely distinct legal frameworks.

The restrictions around permitting that traditionally required favoring Georgia citizens for "intertidal" leases to harvest wild oysters probably do not implicate the Constitution's Privileges and Immunities Clause.[292] However, the new mariculture laws no longer ensure that wild oysters are the primary resource, or "crop," to be harvested. Farming and harvesting oysters raised from out-of-state oyster seed on intertidal or subtidal leases that are not attached or related in any way to wild oyster beds—and for subtidal leases are in fact are required by regulation to be in areas that do not include wild oyster beds—raises a related but different constitutional question. The issue is whether the ability to raise a farmed product can be reserved for only citizens of the state, or whether the leases and permits used to regulate the industry must be made freely available on the interstate commerce market. Precedent indicates that the *planting* of *wild* oysters may be restricted to in-state citizens, but the commerce around the harvesting of that resource or crop could also still implicate a rational basis review under Dormant Commerce Clause.[293]

The relevant case law rests heavily on a historic understanding of wild oyster harvesting from existing oyster beds, as well as related activities like planting and cultivating oyster larvae and shell "culch" in those areas. State laws governing leases and harvesting may still be valid so long as they do not violate property rights or public trust doctrine.[294] Georgia's new subtidal, deeper water leases with statutorily permitted floating equipment change the nature of the industry in a way

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[292] Corfield v. Coryell, 6 F.Cas. 5464 Wash.C.C. 371 (Cir. Ct. E.D. Pa. 1823) (sustaining NJ statute forbidding anyone not "an actual inhabitant and resident" to gather clams and oysters from state waters, reasoning citizens of all states are not permitted to participate in all the rights and advantages which belong exclusively to the citizens of a particular state; rather, under the Privileges and Immunities Clause, things like life, liberty, property, happiness, travel, and voting are "subject to such restraints as the government may prescribe for the general good of the whole").

[293] McCready v. Virginia, 94 U.S. 391 (1876).

[294] Martin v. Waddell's Lessee, 41 U.S. 367 (1842); Jones v. Oemler, 110 Ga. 202 (1900).

that has yet to be analyzed under the legal framework of the Privileges and Immunities Clause or the Dormant Commerce Clause. Currently, Georgia's subtidal oyster farming leases do not require a preference for in-state citizens, which may already represent implicit attention to these details. The intertidal leases retain a required preference for in-state citizens, a requirement present in many other states who have already expanded their oyster industries into crop-farming territory even in the same areas. Both leasing systems raise legal issues worthy of further study and analysis, especially as Georgia's new industry grows.

Appendix B: Charts Comparing Southeastern State Mariculture Programs

State	Oyster Laws Enacted / Amended	Miles of Coast / Tidal Area	Approved or Conditionally Approved Shellfish Growing Waters (acres)	2019 Floating Oyster Farm Leases	2019 Oyster Farm Bottom Leases	2019 Oyster Revenue+	# of State Shellfish Industry Employees / Jobs[295]
FL	2000 / 2005	1350 / 8436	1.3 million	436	N/A	$3 million	~25 / 400
SC	2000 / 2017	187 / 2876	404,600	8-10	34	$3.7 million	~13 / no info
AL	2009 / 2013	53 / 607	211,200 (conditionally approved only)	21-22	N/A	$1.5 million	~2 (Sea Grant only) / ~50
NC	1989 / 2009 / 2019	301 / 3375	1.4 million	~56	232	$4.9 million	~33 / 228
VA	2006	112 / 3315	400,000	49	~5000*	$38.6 million	~30+ / 965
GA	2019	100 / 2344	150,000 (approved only)	0 (now 6 in 2022)	~21	$136,000	~1-4 / no info

State	Full-time Aquaculture Coordinator	State-funded hatchery	Use Zones or Select Sites?	Lease Selection Process	Year-round harvest?
FL	Yes	Yes	Both (26 zones)	First come, First serve	Yes

[295] These numbers reflect data gleaned from state agency websites and conversations with state shellfish aquaculture staff, as well as information compiled in *North Carolina Strategic Plan for Mariculture: A Vision to 2030*, Final Report to the North Carolina General Assembly, https://collaboratory.unc.edu/wp-content/uploads/sites/476/2019/01/NC-Strategic-Plan-for-Shellfish-Mariculture-Final-2018.pdf at 31 (last visited June 28, 2021); North Carolina Department of Environmental Quality, Shellfish Sanitation Staff, https://deq.nc.gov/about/divisions/marine-fisheries/shellfish-sanitation-and-recreational-water-quality/useful#staff-directory; Virginia Department of Health, Shellfish Division Staff, https://www.vdh.virginia.gov/environmental-health/environmental-health-services/shellfish-safety/shellfish-division-staff/; Florida Department of Agriculture and Consumer Services, Aquaculture, https://www.fdacs.gov/Agriculture-Industry/Aquaculture/Shellfish-Harvesting-Area-Classification.

SC	Yes	No (private only)	Select	First come, First serve**	Yes, with permit
AL	Yes	Yes	Select	Competitive Bidding***	Yes
NC	Yes	Yes	Both (zones TBD)	First come, First serve	Yes
VA	Yes	Yes	Both	First come, First serve	Yes
GA	No	Yes	Zones only (2)	Lottery	Yes, with permit****

+Total oyster landing revenue reflects both farmed and wild oyster landings, but farmed oysters do generate more revenue.
*Data differentiating the various types of leases in Virginia is not clear, but the number of leases is very high. *See, e.g.*, Jennifer Beckensteiner et al., *Barriers to Easter Oyster Aquaculture Expansion in Virginia*, FRONTIERS (2020).
**South Carolina has a statutory lottery system in the event two applicants propose the same site, but it has never been used.
***Alabama's 2013 amendments may have done away with competitive bids for state-owned leases (non-riparian).
****Georgia CRD and Georgia Sea Grant plan to do a feasibility study in summer 2022 to determine whether and how to permit closed season summer harvest.

Notes (moving left to right on charts above)

(1) Georgia's law is the newest one on the list (only Texas came later)
(2) Georgia very recently issued its very first floating farm leases, which are the most economical.
(3) Intertidal farming leases are also available with the new law, and they have some potential for growth.
(4) CRD does not have anything close to the staff other states use, except for Alabama, who gets a lot of support from elsewhere and does an impressive amount of work on its tiny little coastline.
(5) Georgia probably needs a full-time Mariculture Coordinator, or some equivalent, to implement the leasing, permitting, educational, and outreach tools necessary to grow.
(6) Most states continue to utilize state-funded hatcheries, even if private hatcheries exist, for a variety of reasons, including research, development, and education for things like equipment.
(7) Georgia is low on the list for revenue, but if Georgia streamlines the siting of new mariculture zones and permitting processes, it can create the revenue (and tax dollars) of similarly situated southern states.
(8) Allowing oyster farmers to select their own locations for smaller leases could help the industry grow, and other states allow this selection, even when they also utilize mariculture zones. Zones may help with user conflict situations, but these situations are almost inevitable due to the nature of public trust resources. User conflicts might be better mitigated by more detailed or expansive requirements for notice, public hearing, and zoning uses. Notably, user conflict lawsuits related to oyster aquaculture are almost never successful, even if a nuisance.
(9) Other states do not use lotteries as a permanent part of their programs. Lotteries may be useful for new programs or areas emerging from shellfish harvest

moratoriums, but perhaps Georgia's lottery should not be a permanent fixture of its program.

(10) Guaranteeing the ability to harvest farmed oysters year-round cannot be overstated if the industry is expected to grow and compete in the modern half-shell market.

State	Lease Fees	Oyster Farming Lease Acreage / Types	Oyster Farm Lease Notes	Production Requirements	Gear Types
NC	$1 / acre for first year, then $10 / acre, $100/acre for water column	~2000 acres / ~200 with water column "amendments"*	Water column "amendments" increasing substantially since 2017	23,000 seed / acre / year (or average 20-50 bushels / acre over 3 yr period beginning year 5); water column amendments require 4x the production	All
L	$15 / acre (+ $10 surcharge)	1500 acres / 172 leases for water column	Water columns doubled since 2019	1 yr to begin "bona fide" cultivation, 2 yrs to have ½ of lease under cultivation, ¼ of lease each year after	All
SC	$250 / acre	665 acres / 11 permits for water column mariculture	Summer harvest currently challenged in legislature	None	Floating and Bottom Cages / Nets
A	$1.50 / acre	136,000 acres / 50-60 floating leases, ~100 w/ "aquaculture"	Majority of leases are traditional "on-bottom," many leases not used	Generally: "Significant production, reasonable plantings, and per acre effort per year is considered in totality" Specifically: 1 bushel / acre / year	Floating and Bottom Cages / Nets
L	$5 / acre, $25 fee (culture) / additional $5 for floating	~44 acres / All water column / 2 oyster "parks" / 72 total acres	Oyster Parks managed by a high school and Auburn Shellfish Lab	50 bushels/acre culture, "show commercial use" mariculture	All
A	$50 / acre	6 new subtidal oyster leases (water column) / 52.5 acres, 1 intertidal oyster farm (on-bottom cages)	More intertidal oyster farm leases forthcoming, more subtidal leases to be sited	100,000 seed / acre / yr	Floating and Bottom Cages / Nets (no long lines)

* North Carolina law requires oyster farmers to have a "bottom" lease in order to qualify for a column "amendment."

State	State Agency	Joint Federal / State Application	Residency Requirement
FL	Ag & Consumer Services (FACS)	No, but General Permit Substitutes	No
AL	DNR / Health and Environmental Control (DHEC)	Yes	No, but out-of-state surcharge
SC	Conservation and Natural Resources (DCNR) / Dept. of Public Health	Yes	Yes, 1 year, individual or business
NC	Marine Fisheries (DMF) / Environmental Quality (DEQ)	No	Yes, 6 months, all LLC members
VA	Virginia Marine Resources Commission (VMRC) / Ag / VA Dept. of Public Health Shellfish Division	Yes, and also General Permit	Yes, 60% of LLC members
GA	DNR / Ag (DOA)	No	Yes, 3 months, 1 LLC member

State	10-Year Average Revenue	2019 Revenue	$ per coastal mile (10-yr. avg.)	$ per tidal mile (10-yr. avg.)
FL	$5.9 million	$3 million	$4,335	$699
SC	$2.5 million	$3.7 million	$13,135	$869
AL	$814K	$1.5 million	$15,358	$1341
NC	$5.3 million	$4.9 million	$17,601	$1570
VA	$28 million	$38.6 million	$250,000	$8436
GA	$149K	$136K	$1,356	$64
MS	$1.4 million	$344K (2017)	$31,818	$3,900
LA	$56.6 million	$45.4 million	$142,569	$7,331
TX	$19.9 million	$33.5 million	$54,223	$5,924

State	Marketing, Training, Education	User Conflicts	Riparian Notice	Type/Length of Riparian Notice or Pre-Application Meeting

L	Website, "Bulletins," BMPs, Youtube Workshops, Oyster Trails	Yes	Yes, if within 500 feet	Actual and Publication
L	Website, Business Planning Tool	Yes	No, but USACE yes	Publication
C	Flow Chart	Yes	Yes, DHEC	Publication
C	Strategic Plan, Oyster Gardening, Oyster Sanctuaries, Live Workshops	Yes	Yes, if within 250 feet	-Proof of attempt to notify by certified mail -Service by law enforcement or publication -Notice of decision to people who submit comments -Shellfish Lease Review Committee for contested decisions
A	Oyster Trails, Oyster Gardening, VA is for Oyster Lovers	Yes	Yes, if within 200 feet	Certified Mail, plus 30 days on the web, Form for adjacent property owners to fill out as part of application
A	Policy Manual	Not yet	No, USACE?	Publication