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Oysters, Ecosystems, and Persuasion

Alison Rieser*

INTRODUCTION

The Eldest Oyster winked his eye, and shook his heavy head.
Meaning to say he did not choose to leave the oyster bed.¹

In his essay on the commons scholarship of Carol Rose, Michael Heller deploys an epoch-spanning synopsis of Western society's passion for the oyster to make his case for a Rose theorem.² Professor Heller posits that the work of Carol Rose sets out a testable theory: law emerges from and is shaped by the interactions of human culture with nature and natural resources. The oyster's survival across the ages, he suggests, is due to this process, a "constantly shifting matrix of strategies, simultaneously public and private, individual and community, and on their constant renegotiation and interpolation."

Professor Heller's is indeed an engaging account, and he is certainly correct that the oyster's story challenges the neoclassical economic account of the evolution of property rights. But as an account of what the oyster's story contributes to our ideas about common resources, it is incomplete. And Heller surely has not gone far enough in looking at the scholarship of Carol Rose from the point of view of the oyster. By failing to bring the story into the twenty-first century, Heller misses most of what the oyster's story tells us about human institutions.³

By example and methodology Carol Rose shows us how to draw lessons for our own times and environmental challenges by looking at history, at

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1. LEWIS CARROLL, *THROUGH THE LOOKING GLASS AND WHAT ALICE FOUND THERE* (1872).

2. See Michael Heller, *A Rose Theorem?*, 18 *YALE J.L. & HUMAN.* 29 (2006).

3. It is not at all clear that the Eastern oyster has indeed survived. *Crassostrea virginica* is estimated to be at less than 2% of its original abundance; its survival is threatened by disease, water pollution, and loss of habitat, in addition to roughly two centuries of overexploitation. See NOAA, NMFS, 90-Day Finding on a Petition to List the Eastern Oyster as Endangered or Threatened, 70 Fed. Reg. 28510 (May 18, 2005).

our customs, norms, and conceptions of property rights as they have changed over time, and at the way we have been persuaded to think about resources and our relationship to them. In this brief commentary, I will attempt to tell a bit more of the oyster's story and that of Chesapeake Bay, the vast North American estuary the oyster long ago colonized and shaped, showing how particular voices have shaped our view of how best to arrange ourselves in relation to natural resources and places.

I. THE MANY STORIES OF THE EASTERN OYSTER

Many have looked at the story of the oyster fisheries and drawn their own conclusions. Some have seen only a tragedy; others have seen a comedy. One of the earliest accounts of the tragedy of the common resource was drawn from the history of the Maryland oyster fisheries in the Chesapeake.⁴ Indeed, a fascinating story could be told just by contrasting the different lessons people draw from the story of the oyster.⁵

The Chesapeake oyster fishery began its cycles of boom and bust and its battles over rights to the oyster beds when New England oystermen went south to find seed oysters to replenish their overfished beds.⁶ At the end of the nineteenth century, the booming fishery had begun to decline dramatically. One of the most important voices calling for enclosure of the commons and a new regime based on private rights was that of William K. Brooks, Professor Heller's interlocutor.⁷

Brooks was not simply an oyster biologist and chronicler of the tragic-

4. See Charles H. Stevenson, *The Oyster Industry of Maryland*, BULLETIN OF THE U.S. FISH COMMISSION, Vol. XII for 1892, 203-97 (1894) (describing the oyster fishery in words very similar to Garrett Hardin, *The Tragedy of the Commons*, 162 SCI.1243 (1968)); see also Francis T. Christy, Jr., *The Exploitation of a Common Property Natural Resource: The Maryland Oyster Industry* (1964) (Ph.D. dissertation, University of Michigan) (on file with University of Michigan).

5. Compare, e.g., Richard J. Agnello & Lawrence P. Donnelly, *Property Rights and Efficiency in the Oyster Industry*, 18 J. LAW & ECON. 521 (1975) (public ownership led to dissipation of rents while private oyster fisheries thrived), with George D. Santopietro & Leonard A. Shabman, *Can Privatization Be Inefficient?: The Case of the Chesapeake Oyster Fishery*, 26 J. ECON. ISSUES 407 (1992) (privatization would have destroyed the network of social relationships upon which the oystermen depended and which they valued above all else).

Today, the oyster story should interest anyone considering whether commercial fisheries should be privatized through the creation of individual fishing quotas, one of the new-fangled, property-like tools in vogue and one which Carol Rose has contrasted with community-based management regimes. See Alison Rieser, *Prescriptions for the Commons: Environmental Scholarship and the Fishing Quotas Debate*, 23 HARV. ENVTL. L.REV. 393 (1999) (describing the debate over transferable fishing quotas and the absence of consideration of how quotas may affect ecosystem-based management); Carol M. Rose, *Common Property, Regulatory Property, and Environmental Protection: Comparing Community-Based Management to Tradable Environmental Allowances*, in *THE DRAMA OF THE COMMONS* 233 (E. Ostrom ed., 2002).

6. V.S. Kennedy & L.L. Breisch, *Maryland's Oysters: Research and Management, A Maryland Sea Grant Publication*, Number UM-SG-TS-81-04 (1981) at xii, available at <http://www.mdsg.umd.edu/oysters/research/mdoysters.html>.

7. Heller, *supra* note 2, at 37. See generally Christine Kleiner, *W.K. Brooks and the Oyster Question: Science, Politics, and Resource Management in Maryland, 1880-1930*, 31 J. HIST. OF BIOLOGY 383 (1998).

comedy of the Oyster Wars of the 1880s.⁸ Brooks was the foremost morphologist and embryologist of his time. Through patient experiments and a sense that the leading French biologist who believed baby oysters were hatched inside the shell had it wrong, Brooks worked out the reproductive biology of the Eastern oyster.⁹ He found that oyster fertilization occurs in the water and that the developing oyster larvae float in the currents for a time before settling onto a suitable bottom. Brooks believed the decline of the oyster fisheries would be stemmed if oystermen could be convinced to take advantage of this life strategy. By cultivating their own beds instead of fighting among themselves to take the greater share from the common oyster beds, the watermen could ensure their livelihoods as well as that of the oyster.

But Brooks's campaign for private oyster beds did not succeed. The Maryland oystermen vehemently opposed privatization. They sued, cajoled, threatened, and perhaps even bribed, although it is likely they did not have to. Because the coastal counties of Maryland were over-represented in the General Assembly, the tidewater representatives blocked attempts to enact laws that would allow private individuals to farm oysters in the Bay.¹⁰

In neighboring Virginia, the property rights approach found a more receptive audience.¹¹ Largely due to the different ecological conditions in the southern end of the Bay, Virginia's bay waters and tributaries were excellent places for the production of seed oysters but not as well-suited for growing oysters to market size.¹² Virginia watermen also resisted privatization of the oyster beds, but Virginia lawmakers allowed a few to obtain leases. The lessees' success encouraged others to restore the cultch and plant oyster beds.

Roughly a century after W.K. Brooks made his discoveries and pleas for bed cultivation, his privatization prescription was vindicated. In the 1970s, economists Richard Agnello and Lawrence Donnelly compared the value of oyster fisheries in Maryland, Virginia, Louisiana, and Mississippi. In these states, some beds were managed by the state and others were owned and managed by private individuals who had obtained title or leaseholds from the state. Revenues from the private oyster beds were higher because the oysters were allowed to grow over the course of the season rather than

8. W. K. Brooks, *THE OYSTER, A POPULAR SUMMARY OF A SCIENTIFIC STUDY* (2d rev. ed., The Johns Hopkins University Press) (1905).

9. Kleiner, *supra* note 7, at 391.

10. Garrett Power, *More About Oysters Than You Wanted to Know*, 30 MD. L. REV. 199, 213-16 (1970).

11. John J. Alford, *The Chesapeake Oyster Fishery*, 65 ANNALS ASSOC. AMER. GEOGRAPHERS 229, 235 (1975).

12. *Id.* at 235 ("Although Virginia [and Maryland] watermen have similar attitudes, ecological differences have made private culture more palatable in Virginia.").

being harvested too early to generate the greatest profit.¹³ Secure in their rights to the beds, the owners could wait for higher prices and the optimum harvest time. In the economists' view, the oyster story supplied empirical evidence for H. Scott Gordon's model that ownership rights to resources are important determinants of economic efficiency.¹⁴

This account apparently has become the standard fare in economics textbooks and the oyster something of a poster child for the campaign to privatize the fishery commons.¹⁵ But another version of the oyster story is equally instructive. The oystermen of the Chesapeake fought to retain the open access character of the oyster fishery to preserve a way of life that was deeply embedded in the tidal creek communities along the Bay's tributaries. They fought against private property rights in the beds because they did not want to become farmers or end up working for wealthy cultivators on beds some distance from their homes. The oystermen wanted to remain connected to the local beds their communities had grown up around.¹⁶

Moreover, the privatization proposals of Brooks and his followers may have failed to appeal due to the proponents' emphasis on the individual aspect of the proposed private rights. Although accounts of the Oyster Wars make the fishery seem more like a blood sport than a mere livelihood, it is conceivable that proposed community-based property rights in oyster beds might have fared better. As Carol Rose has suggested, many resource users value the right of *common* access and scoff at the notion that an individual owner will take better care of the resource.¹⁷ Private property has at least one normative component that does not sit well with some people. Its appeal to self-interest does not naturally suggest that a resource will be husbanded.¹⁸

13. Richard J. Agnello & Lawrence P. Donnelly, *Prices and Property Rights in the Fisheries*, 42 S. ECON. J. 253, 259 (1975).

14. *Id.* at 261. See also Richard J. Agnello & Lawrence P. Donnelly, *Property Rights and Efficiency in the Oyster Industry*, 18 J. LAW & ECON. 521, 532-33 (1975). Gordon's model is presented in H. Scott Gordon, *The Economic Theory of a Common Property Resource: The Fishery*, 62 J. POL. ECON. 124 (1954).

15. See Santopietro and Shabman, *supra* note 5, at 408. See, e.g., TERRY L. ANDERSON & DONALD R. LEAL, FREE MARKET ENVIRONMENTALISM 124 (1991) (In discussing Agnello and Donnelly, stating that "[t]hese findings support the expectation that private property rights solve the open-access problem.").

16. George D. Santopietro & Leonard A. Shabman, *Can Privatization Be Inefficient?: The Case of the Chesapeake Oyster Fishery*, 26 J. ECON. ISSUES 407, 413-14 (1992). A similar story is presented in BONNIE J. MCCAY, OYSTER WARS AND THE PUBLIC TRUST: PROPERTY, LAW, AND ECOLOGY IN NEW JERSEY HISTORY (1998) (tracing the American public trust doctrine to the oyster wars in New Jersey in the early nineteenth century). *But see* James R. Rasband, *The Public Trust Doctrine: A Tragedy of the Common Law*, 77 TEX. L. REV. 1335 (1999).

17. Carol M. Rose, *The Several Futures of Property: Of Cyberspace and Folk Tales, Emission Trades and Ecosystems*, 83 MINN. L. REV. 129, 176 (1998).

18. Carol M. Rose, *Given-ness and Gift: Property and the Quest for Environmental Ethics*, 24 ENVTL. L. 1, 28 (1994).

II. ECOSYSTEMS AND PERSUASION

But let us return to the Chesapeake. Having served indirectly as the inspiration for the tragedy of the commons, the Bay has gone on to become one of the most closely-watched managed ecosystems. A century after W. K. Brooks urged Marylanders to privatize the oyster beds, the Chesapeake became the focus of a major restoration effort.

The Chesapeake Bay Program is a network of cooperative, intergovernmental, and private-public partnerships virtually unprecedented in this country, though not out of proportion to the size of the task or to the importance of the nation's largest estuary. Some argue that it is a model, best-case scenario of collaboration and engagement of citizens, scientists, politicians, and industries.¹⁹ Yet, despite this attention, the Bay gets a failing grade in the annual report card on its environmental quality.²⁰ Urban and agricultural runoff still fouls the Bay, despite the numerous innovations in law and policy adopted by the Chesapeake partnership, including a trading program for credits in nutrient loading reductions, a newfangled form of regulatory property.²¹ What gives?

Again, Carol Rose's approach is informative. She explains that for ecosystem management, you need a hook to get people's attention, such as fish people eat, a charismatic species like the Pacific salmon, or a place that people are attached to.²² Hooks are good for getting people's attention and seeing the value in viewing ecosystems as a whole. But, she warns, they are not good as a management strategy. Relying on regulatory hooks can lead to regulating things that are the most obvious to regulate, such as the fishery, or a big, obvious point source of pollution, or a new land subdivision.²³ This focus actually undermines the message the public needs to be persuaded to buy into: because the ecosystem has value as a large, interactive system, its management requires looking at all of the different parts.²⁴ When certain obvious targets are the focus, everyone else is let off the hook and persuasion fails.

19. See, e.g., Bradley Karkkainen, *Marine Ecosystem Management and a "Post-Sovereign" Transboundary Governance*, 6 SAN DIEGO INT'L. L.J. 113, 126 (2004).

20. See, e.g., CHESAPEAKE BAY FOUND., 2005 STATE OF THE BAY REPORT. The Foundation, the largest NGO working to protect the Bay, has created a scale of the various environmental quality parameters, with one hundred representing the Bay as the English explorer John Smith described it in his narratives from the early 1600s. The grades in recent years have been around twenty-seven; the Foundation's goal is for the Bay to reach 40 by 2010.

21. See Chesapeake Bay Program, Nutrient Trading Principles, available at <http://Chesapeakebay.net/trading.htm>; see also Ann Powers, *The Current Controversy Over Regulating TMDLs: Contemporary Perspectives, TMDLs and Pollutant Trading*, 4 RES COMMUNES: VT J. ENV'T. 2, text at notes 119-29 (2002-03) (describing TMDLs and the Chesapeake Program).

22. Carol M. Rose, *Demystifying Ecosystem Management*, 24 ECOL. L. Q. 865, 868 (1997).

23. *Id.* Rose gives the example of the fishermen as the easiest thing to regulate and the setting of catch quotas in numbers of pounds. In the Chesapeake, even this big target proved impossible to manage.

24. *Id.*

Applying the Rose view we can see that the Chesapeake Bay Program failed to spread out the costs of supporting ecosystem management; this failure prevented Bay managers from assessing the strength of the public's desire for ecosystem health. It also kept people from feeling like stakeholders, like owners of the ecosystem's integrity. When a new Wal-Mart or housing subdivision is proposed at a highway interchange in a rural county within commuting distance of the District of Columbia or Baltimore, do people make the connection to the Bay, the oysters, or the seagrass beds, and to the benefits of restoring the health of the Bay? The costs people were asked to incur were not enough to give them a sense of common ownership and a stake in the Program.

III. A *DEUS EX MACHINA* THAT MAY TURN TRAGEDY INTO COMEDY

Finally we come back to the story of an oyster. But not *Crassostrea virginica*, the Eastern oyster that inspired the Oyster Wars and was the object of the passions Professor Heller describes. Now, the restoration of the Chesapeake has found a potential savior oyster. This one is the non-native oyster, *Crassostrea arkenensis*, imported from Asia. Its resistance to the diseases that plague the native oyster and the ease of its cultivation suggest it could help restore both the estuarine ecosystem and the fisheries of the Bay.

When the idea of introducing the Asian oyster was first mooted, the governor of Maryland vehemently opposed it. Now, a new Maryland governor has taken up the idea, directing his Department of Natural Resources to pursue it with all deliberate speed.²⁵ Not everyone is convinced that the potential benefits of the introduction are worth the significant risks to the remaining wild populations of the Eastern oyster and to the neighboring estuaries that may find Asian oysters taking up residence.²⁶

In 2005, a Maryland environmental consultant petitioned the National Marine Fisheries Service to list the Eastern oyster as endangered or threatened under the Endangered Species Act (ESA).²⁷ The petitioner tried to introduce a new narrative, one emphasizing the risk of extinction that

25. State of Maryland, Department of Natural Resources, In Focus, Non-Native Oysters, available at <http://www.dnr.state.md.us/dnrnews/infocus/oysters.asp> (last visited Mar. 23, 2006); see Nat'l Research Council, NONNATIVE OYSTERS IN CHESAPEAKE BAY (2004) at 15, available at <http://www.nap.edu/catalog/10796.html>.

26. See J. Jed Brown et al., *When the World Is Not Your Oyster*, 309 SCI. 244 (2005) (discussing possible interstate conflicts over the introduction).

27. Wolf-Dieter N. Busch, Petition to List the Eastern Oyster (*Crassostrea virginica*) as Threatened or Endangered Species, at <http://www.eiadvisoryservices.com> (cover letter, Jan. 5, 2005) ("I am distressed by the slow and disorganized effort to restore the Chesapeake Bay's ecosystem. . . . Although restoration is still very viable Maryland is looking at a unilateral "quick fix" to resolve low oyster abundance by introducing the Asian oyster. The current very low abundance of the eastern oyster, coupled with its stressed environment seems to require action to protect the species.").

the Eastern oyster faces, not the least of which is brought about by the proposed introduction of a non-native, potential competitor species. When the Fisheries Service announced that the listing petition had met the first regulatory hurdle and requested public comment on the proposal,²⁸ a firestorm of criticism was unleashed, including a well-worn counter-narrative about the taking of private property rights by capricious bureaucrats.²⁹

It seems that in the twenty-first century, the oyster is again providing stories for many different sides. But we do not yet know which story will hold the most sway. Will the story of a fast-growing, disease-resistant oyster that can restore the Bay's health and the fisheries' prominence overcome the fear of unleashing an invasive species that resists control or eradication? Will the public right to a *native* oyster fishery in neighboring states rear its head and stop the introduction?³⁰

Professor Heller is correct that the oyster has inspired a "constantly shifting matrix of strategies, simultaneously public and private, individual and community, [under] constant renegotiation and interpolation."³¹ Whether it will survive this century depends on the ability of those, like W.K. Brooks, whose special vantage point allows them to see the sediment and sentiments most clearly, to persuade the rest of us to come to the table, put our forks down, and listen.

28. 90-Day Finding on a Petition to List the Eastern Oyster as Endangered or Threatened, 70 Fed. Reg. 28510 (May 18, 2005).

29. Statement of Representative Richard Pombo, Chair, House Resources Committee, Eastern Oyster Hearing, July 19, 2005, at <http://resourcescommittee.house.gov/archives/109/testimony/2005/pombo071905.htm>; see also Kate Madin, *Should Eastern Oysters Be Put on the Endangered List?*, OCEANUS MAG., Nov. 4, 2005, at <http://www.whoi.edu/oceanus/viewArticle.do?id=8006&archives=true>.

30. See Brown et al., *supra* note 26.

31. Heller, *supra* note 2, at 44.