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Legal Obstacles to Private Ordering in Marine Fisheries

Jonathan H. Adler*

I. INTRODUCTION

*The overall state of the world's fisheries is much worse today than 45 years ago, even though most fisheries have come under government regulation in this period.*¹

Fisheries worldwide are in decline. Overfishing and poor management have left numerous fish species in trouble. It is estimated that almost one-half of global fish stocks are fully exploited and approximately twenty-two percent are over-exploited.² Even those who otherwise question tales of environmental ruin acknowledge the plight of the world's marine resources.³ The United

* Assistant Professor of Law, Case Western Reserve University. This paper was prepared for the National Fisheries Law and Policy Symposium at Roger Williams University Ralph R. Papitto School of Law, June 28, 2002. The author would like to thank Jonathan Entin, Bishop Grewell, Erik Jensen, Andrew Morriss, Craig Nard, and Katrina Wyman for their comments on earlier drafts of this paper. Any errors or omissions remain those of the author.

1. Ralph Townsend, *Producer Organizations and Agreements in Fisheries: Integrating Regulation and Coasian Bargaining* 222 (Jan. 2002) (unpublished manuscript, on file with author) (prepared for the Political Economy Research Center's (PERC) Thirteenth Political Economy Forum "Evolving Property Rights in Marine Fisheries" at Big Sky, Montana).

2. Louis W. Botsford et al., *The Management of Fisheries and Marine Ecosystems*, 277 SCI. 509, 509-10 (1997) (citing estimates of the American Fisheries Society that forty-four percent of fish stocks are "fully to heavily exploited," sixteen percent are "over-exploited," and six percent are "depleted"). Of additional concern is that fishery landings have shifted "down" the food web from larger fish to smaller fish and invertebrates, suggesting that existing catch levels are unsustainable. See Daniel Pauly et al., *Fishing Down Marine Food Webs*, 279 SCI. 860, 860 (1998); see also J.F. Caddy et al., *How Pervasive Is "Fishing Down Marine Food Webs?"*, 282 SCI. 1383a (1998); Daniel Pauly et al., *Response* (1998), at <http://www.sciencemag.org/cgi/content/full/282/5393/1383a> (on file with author).

3. See, e.g., Ronald Bailey, *Prologue: Environmentalism for the Twenty-First Century*, in *THE TRUE STATE OF THE PLANET* 4 (Ronald Bailey ed., 1995); see also

States is no exception. The National Marine Fisheries Service (NMFS) identified sixty-five overfished species in its latest report to Congress.⁴ The status of an additional 589 species is unknown.⁵ While NMFS reports the number of healthy fish species has increased in recent years, such gains have come at tremendous cost to local fishing communities faced with fishery closings and other stringent conservation measures. Nearly three decades of federal regulation have failed to provide for the sustainable utilization of America's marine resources.

There is a need to rethink the near-exclusive reliance upon government management to protect marine resources. Efforts to design fishery management regimes that allow for substantial harvests while conserving fish populations have largely failed. Even where the necessary management measures can be identified, political influence impedes their adoption and effective implementation. Well-intentioned fishery regulation has failed to conserve fish stocks. Fortunately, there are alternatives to consider.

There is substantial, yet inadequately explored, potential for private ordering and other nongovernmental solutions to environmental problems. Order can emerge from the spontaneous interaction of community members or common resource users. Such private ordering can produce, and has produced, resource management regimes that could supplement, and in some cases, replace existing regulatory institutions for fishery management. Yet obstacles must be overcome to realize the full potential of such management alternatives. It is well-known that coordination and free-rider problems can frustrate the development of nongovernmental institutions. Less well-explored is the possibility that existing legal rules inhibit the emergence of community-based rules and conservation regimes. In the fisheries context, one such obstacle is antitrust law, which acts to obstruct cooperative management arrangements that, by reducing harvest levels, mimic the effects of

EJØRN LOMBORG, *THE SKEPTICAL ENVIRONMENTALIST* 106-08 (2001) (acknowledging that numerous ocean fisheries are overfished and suffering declining yields, and that future increases in fish production will come from aquaculture and fish farming, rather than ocean fisheries).

4. NAT'L MARINE FISHERIES SERV., 107TH CONG., *TOWARD REBUILDING AMERICA'S FISHERIES: ANNUAL REPORT TO CONGRESS ON THE STATUS OF U.S. FISHERIES—2001* 11-12 tbl. 1 (2002), available at <http://www.nmfs.noaa.gov/sfa/reports.html>.

5. *Id.*

cartels. Understanding how antitrust law and other legal frameworks can facilitate or frustrate private ordering is necessary to unleash the potential of nongovernmental institutions.

Part II of this Article surveys the challenges of marine conservation, the failures of existing regulatory regimes, and the potential for property rights in marine resources. Part III discusses the nature of private ordering, providing examples that arise from the fisheries context. Part IV discusses how legal rules can inhibit private ordering. That section focuses in particular on how antitrust law has impeded cooperative fishery management. Part V then explores possibilities for overcoming antitrust obstacles to private ordering. This Article concludes with some broader thoughts about the implications of this research for resource conservation.

II. THE CHALLENGE OF MARINE CONSERVATION

*It is a commonplace to observe that for natural resources – as for other types of wealth – “everybody’s property is nobody’s property.”*⁶

Conservation of marine fisheries presents the archetypal “commons” problem, most famously detailed by ecologist Garrett Hardin in *The Tragedy of the Commons*.⁷ Hardin described the fate of a common pasture, unowned and available to all.⁸ In such a situation, it is in each herder’s self-interest to maximize his use of the commons at the expense of the community at large. Each herder captures all of the benefit from adding one more animal to his herd. The costs of overgrazing the pasture, however, are distributed amongst every pasture user. When all the herders re-

6. Anthony Scott, *The Fishery: The Objectives of Sole Ownership*, 63 J. POL. ECON. 116, 116 (1955). Aristotle made the same point far earlier. See ARISTOTLE, *POLITICS* §1261.b32 (T.A. Sinclair trans., Trevor J. Saunders ed., Penguin Books 1981) (“[T]he greater the number of owners, the less the respect for common property.”).

7. Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243 (1968). While Hardin is most commonly associated with this analysis, the commons problems in the context of the fishery was described several years earlier in H. Scott Gordon, *The Economic Theory of a Common-Property Resource: The Fishery*, 62 J. POL. ECON. 124 (1954). See also Scott, *supra* note 6.

8. Hardin, *supra* note 7. It is important to note that Hardin’s argument applies to open-access commons. Historically, common pastures were rarely open-access, and were typically protected by common property rules, customary norms, or other restraints on consumption. See *infra* note 86 and accompanying text.

spond to the incentives created by the open-access nature of the commons, the pasture is overgrazed. "Each man is locked into a system that compels him to increase his herd without limit – in a world that is limited."⁹ The pursuit of self-interest in an open-access commons results in a tragedy; "[f]reedom in a commons brings ruin to all."¹⁰

This analysis applies well to most marine fisheries.¹¹ So long as there is open-access to the fishery, each fisher has an incentive to catch as much as possible, even beyond the point of sustainability. These incentives are strong in the fishery context as the marginal cost of increased fishing effort for an active fisher is often quite small compared to the potential economic reward. Fishers do not benefit from self-restraint because none has any assurance that other participants in the fishery will follow suit.

A. *Avoiding the Tragedy of the Commons*

The "tragedy of the commons" is not inevitable. If access to the common resource is controlled, and consumption restrained, the commons can be conserved. The initial choice of solutions to the commons problem, as described by Hardin, is between political controls and some form of private property. "The tragedy of the commons . . . is averted by private property, or something formally like it," Hardin explained, but where private property is lacking, the commons can only be saved by "mutual coercion, mutually agreed upon."¹² In either case, "we seek the definite social arrangements that will keep [the resource in question] from becoming a commons."¹³ As Hardin presented the problem, conservation of the commons requires privatization or regulation. Whichever course is chosen, the aim is the same: control access and limit use.¹⁴

9. Hardin, *supra* note 7, at 1244.

10. *Id.*

11. See Gordon, *supra* note 7.

12. Hardin, *supra* note 7, at 1245, 1247.

13. *Id.* at 1247.

14. See Randall Bess & Michael Harte, *The Role of Property Rights in the Development of New Zealand's Seafood Industry*, 24 MARINE POL'Y 331, 331 (2000) ("The challenge for any fisheries policy and management system is to determine and enforce harvest levels that will sustain fish stocks and access rights to fisheries.").

The creation of property rights is the most obvious means of preventing the tragedy of the commons.¹⁵ As a general rule, where resources are owned, there is less concern about their overuse. Property owners have both the ability to protect the owned resource, and a substantial incentive to ensure that the value of their property – both to themselves and to others – is maintained. As Harold Demsetz explains, “[I]f a single person owns land, he will attempt to maximize its present value by taking into account alternative future time streams of benefits and costs and selecting that one which he believes will maximize the present value of his privately-owned land rights.”¹⁶ Conversely, the lack of property rights provides substantial incentives against resource conservation.¹⁷

Not only do property rights provide incentives for better stewardship, they also foster private ordering by reducing the costs of

15. Gordon, *supra* note 7, at 134 (“Environmental conditions make necessary some vehicle which will prevent the resources of the community at large from being destroyed by excessive exploitation. Private or group land tenure accomplishes this end in an easily understandable fashion.”). See generally David Schmidtz, *The Institution of Property*, in *THE COMMON LAW AND THE ENVIRONMENT* (Roger E. Meiners & Andrew P. Morriss eds., 2000) (explaining “how property institutions convert negative-sum or zero-sum games into positive-sum games”).

16. Harold Demsetz, *Toward a Theory of Property Rights*, 57 *AM. ECON. REV.* 347, 355 (1967). “The development of private rights permits the owner to economize on the use of those resources from which he has the right to exclude others.” *Id.* at 356. It is important to note that Demsetz’s claim is not that *every* private landowner will act in this fashion, just that the incentives of ownership are such that the *typical* landowner will act in this fashion. As is true in all contexts, the behavior of specific individuals will vary, with some taking greater or lesser actions to maximize the present value of the property in question. Those property owners who do the best job of estimating likely future income streams are then rewarded in the marketplace with greater property values. See Robert J. Smith, *Resolving the Tragedy of the Commons by Creating Private Property Rights in Wildlife*, 1 *CATO J.* 439, 456 (1981) (“Wherever we have exclusive private ownership, whether it is organized around a profit-seeking or nonprofit undertaking, there are incentives for the private owners to preserve the resource.”). But see Daniel H. Cole, *Clearing the Air: Four Propositions About Property Rights and Environmental Protection*, 10 *DUKE ENVTL. L. & POL’Y F.* 103, 117-25 (1999) (arguing there are many environmental problems for which property rights are not the “first-best” solution).

17. Scott, *supra* note 6, at 116 (“No one will take the trouble to husband and maintain a resource unless he has a reasonable certainty of receiving some portion of the product of his management; that is, unless he has some property right in the yield.”). Again, while it may be an overstatement to claim that “no one” will act in such a manner, this is clearly a case in which the exception proves the rule.

negotiating over remaining externalities.¹⁸ Thus, it may not be necessary to establish property rights in all relevant resources to achieve a substantial amount of cost internalization. Conversely, the mere existence of externalities is often attributable to the absence of property rights and the consequent rights to contract.¹⁹

The creation of property rights is not always an option, however. Property rights can be difficult to define, monitor, and enforce.²⁰ In some cases the costs of establishing property rights will be greater than the benefits.²¹ There may also be political, cultural or social obstacles to their creation. In the context of fisheries, individuated private property rights in fisheries are generally lacking because many species are mobile across vast expanses and access is difficult to monitor.²² These factors, among others, make it particularly costly to define and enforce property rights in the marine context.²³ Property rights in fisheries have also been disfavored in American law.²⁴ Various legal doctrines, including that of the public trust, hold that fisheries are held in trust by the govern-

18. See Schmidt, *supra* note 15, at 120 (explaining how property rights reduce the transaction costs involved with internalizing externalities).

19. Steven N. S. Cheung, *The Structure of a Contract and the Theory of a Non-Exclusive Resource*, 13 J.L. & ECON. 49, 51 (1970).

20. See R. H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 15-16 (1960). See generally Bruce Yandle & Andrew P. Morriss, *The Technologies of Property Rights: Choice Among Alternative Solutions to Tragedies of the Commons*, 28 ECOLOGY L.Q. 123, 139-41 (2001); Terry L. Anderson & Peter J. Hill, *The Evolution of Property Rights: A Study of the American West*, 18 J.L. & ECON. 163, 165-67 (1975).

21. See Terry L. Anderson & Peter J. Hill, *Privatizing the Commons: An Improvement?*, 50 S. ECON. J. 438, 438 (1985).

22. See GARY LIBECAP, *CONTRACTING FOR PROPERTY RIGHTS* 73-74 (1989).

23. See Ronald N. Johnson & Gary D. Libecap, *Contracting Problems and Regulation: The Case of the Fishery*, 21 AM. ECON. REV. 1005, 1019 (1982) (noting how heterogeneity among fishers, including differences in productivity, can hamper support for property-based fishery management); Bonnie J. McCay, *Social and Ecological Implications of ITQs: An Overview*, 28 OCEAN & COASTAL MGMT. 5 (1995) (summarizing the various political concerns, such as "social equity, stewardship, and what this means for public ownership," related to ITQs). See Barton H. Thompson, Jr., *Tragically Difficult: The Obstacles to Governing the Commons*, 30 ENVTL. L. 241, 255-65 (2000), for other obstacles to the creation of property rights in fisheries.

24. The United States Supreme Court has even gone so far as to state that "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." *Douglas v. Seacoast Prods., Inc.*, 431 U.S. 265, 284 (1977).

ment for the common use of all citizens.²⁵ For these reasons, most fishery conservation efforts of the past several decades have relied upon government regulation.

It is now generally accepted that traditional regulatory approaches to fishery conservation have been a "spectacular failure."²⁶ Regulatory controls have typically taken the form of limits on fishing seasons, boat size, fishing areas, equipment and the like. These measures are inefficient, in part, because they are all indirect means of conserving fish stocks. However well-intentioned, such rules often lead to "absurd" results.²⁷ License controls and other entry restrictions may limit the number of fishers, but they do not control the amount or intensity of fishing efforts.²⁸ Mandates on the type of equipment that can be used, an effort to control total catch by mandating that fishers use less-efficient means of catching fish, encourage fishers to increase their investment in additional vessels or gear to compensate for the efficiency losses. Limits on the number of days fished encourage fishers to increase their effort on those days allowed. The results are rampant overcapitalization in fisheries and a destructive "derby" system in which each fisher races to catch as much as he or she can before the season closes. Even in the regulated marine commons, "ruin is the destination toward which all men rush."²⁹

25. See, e.g., Douglas F. Britton, Comment, *The Privatization of the American Fishery: Limitations, Recognitions, and the Public Trust*, 3 OCEAN & COASTAL L.J. 217 (1997). The state constitution of Alaska provides that "[w]herever occurring in the natural state, fish, wildlife, and waters are reserved to the people for their common use." ALASKA CONST. art. VIII, § 3. It is also worth noting that state regulations limiting fishery access in such a fashion so as to privilege state residents are suspect. See *Toomer v. Witsell*, 334 U.S. 385 (1948) (discussing the theory of government ownership of fisheries); *McCready v. Virginia*, 94 U.S. 391 (1876); *Dobard v. State*, 233 S.W.2d 440 (Tex. 1950); *Dodgen v. Depuglio*, 209 S.W.2d 588 (Tex. 1948).

26. Alison Rieser, *Property Rights and Ecosystem Management in U.S. Fisheries: Contracting for the Commons?*, 24 ECOLOGY L.Q. 813, 813 (1997).

27. Terry L. Anderson & Donald R. Leal, *Fishing for Property Rights to Fish*, in *TAKING THE ENVIRONMENT SERIOUSLY* 161, 162 (Roger E. Meiners & Bruce Yandle eds., 1993); see also MICHAEL DEALESSI, *FISHING FOR SOLUTIONS* 31-35 (1998) (summarizing the impacts of fishery regulation).

28. See Johnson & Libecap, *supra* note 23, at 1016; E.A. Keen, *Common Property in Fisheries: Is Sole Ownership an Option?*, 7 MARINE POL'Y 197, 200 (1983) (summarizing research documenting the failure of limited entry to reduce fishing effort).

29. Hardin, *supra* note 7, at 1244.

In Alaska's halibut fishery, for example, as the government shortened the fishing season to prevent overfishing, fishers responded by purchasing larger, more powerful boats and accelerating their catch.³⁰ Eventually, the halibut season was compressed from several months to only a few days.³¹ Fishery regulations produced overcapitalization while reducing the value of the fish caught. The resulting "race to fish" also increased the occupational hazards faced by halibut fishers.³² Regrettably, this pattern has been repeated in many fisheries. Even where regulators set a total allowable catch (TAC) for the fishery, overcapitalization and the "race to fish" ensue. As James Wilen notes, "without a property rights system attached to the *resource* itself, the open access incentives still operate."³³

There are numerous reasons for the failure of traditional regulatory controls. For starters, centralized governmental authorities face many obstacles in seeking to provide optimal levels of environmental protection.³⁴ Perhaps the greatest deficiency facing centralized regulatory authorities is the difficulty in centralizing sufficient knowledge to allocate resources in an efficient manner. As Nobel Prize-winning economist F.A. Hayek explained, "[T]he knowledge of the circumstances of which we must make use never exists in concentrated or integrated form, but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess."³⁵ In other words, ef-

30. Donald R. Leal, *Fueling the Race to the Fish*, in GOVERNMENT VERSUS ENVIRONMENT 48 (Donald R. Leal ed., 2002).

31. *Id.*

32. *Id.*

33. James E. Wilen, *Property Rights and the Texture of Rents in Fisheries* 54 (Jan. 2002) (unpublished manuscript, on file with author) (prepared for PERC's Thirteenth Political Economy Forum "Evolving Property Rights in Marine Fisheries" at Big Sky, Montana).

34. Steven F. Edwards, *Ownership of Renewable Ocean Resources*, 9 MARINE RESOURCE ECON. 253, 257 (1994) ("[G]overnment failure arises because it is difficult to define or quantify a commodity, demand is not known, a lack of competition inhibits accountability and innovation, or government stakeholders are able to gain pecuniary and non-pecuniary sources of income.") (citing C. WOLF, JR., MARKETS OR GOVERNMENTS: CHOOSING BETWEEN IMPERFECT ALTERNATIVES (MIT Press 1988)).

35. F.A. Hayek, *The Use of Knowledge in Society*, 35 AM. ECON. REV. 519, 519 (1945); see also F.A. Hayek, *The New Confusion About Planning*, in NEW STUDIES IN PHILOSOPHY, POLITICS, ECONOMICS AND THE HISTORY OF IDEAS 232, 236 (1978) ("The chief reason why we cannot hope by central direction to achieve anything like the efficiency in the use of resources which the market makes possible is that

fective fishery management depends upon all manner of local and technical knowledge beyond the reach of any centralized management agency.³⁶ As a result of this "knowledge problem," well-intentioned fishery management schemes have failed time and again. "The technological resourcefulness of fishermen has historically made a mockery of the most stringent and carefully crafted command and control regulations aimed at reducing fishing effort," note Shi-Ling Hsu and James Wilen.³⁷ Even expert regulators fail to anticipate the unintended consequences and feedbacks their regulations can induce.

Politics also hampers the ability of regulators to safeguard fishery resources.³⁸ Fishery management councils are often subject to political pressure to increase the total allowable catch in a given season. Where scientific assessments of sustainable catch levels are uncertain, as is typically the case, there is substantial pressure to adopt less conservative assessments.³⁹ Without certain property rights in future catches, fishing interests have no incentive to endorse precautionary catch levels. This pressure can cause a "ratchet effect" that pushes fishing levels above sustainable levels.⁴⁰ The problems of poor regulatory management have

the economic order of any large society rests on a utilization of the knowledge of particular circumstances widely dispersed among thousands or millions of individuals."); HENRY N. BUTLER & JONATHAN R. MACEY, *USING FEDERALISM TO IMPROVE ENVIRONMENTAL POLICY* 27 (1996) ("Federal regulators never have been and never will be able to acquire and assimilate the enormous amount of information necessary to make optimal regulatory judgments that reflect the technical requirements of particular locations and pollution sources."). For a longer discussion of the "knowledge problem" in environmental policy, see Jonathan H. Adler, *Let 50 Flowers Bloom: Transforming the States into Laboratories of Environmental Policy*, 31 ENVTL. L. REP. 11284, 11286 (2001).

36. Ralph Townsend, *Fisheries Self-Governance: Corporate or Cooperative Structures?*, 19 MARINE POL'Y 39, 39 (1995) ("Local communities have extensive information about the resource and about the industry and its technology that is very useful in designing effective rules.").

37. Shi-Ling Hsu & James E. Wilen, *Ecosystem Management and the 1996 Sustainable Fisheries Act*, 24 ECOLOGY L.Q. 799, 806-07 (1997).

38. See Leal, *supra* note 30, at 43.

39. A.A. Rosenberg et al., *Achieving Sustainable Use of Renewable Resources*, 262 SCI. 828, 829 (1993); see also Thompson, *supra* note 23, at 258-59.

40. Botsford et al., *supra* note 2, at 512; Donald Ludwig et al., *Uncertainty, Resource Exploitation, and Conservation: Lessons from History*, 260 SCI. 17, 17 (1993); Rosenberg et al., *supra* note 39, at 828-29.

been combined by other government policies, such as subsidies, which further encourage overcapitalization and overfishing.⁴¹

B. *Property Rights Revisited*

The failure of traditional regulations, and the recent success of alternative management strategies, has renewed interest in the potential use of property rights for marine conservation. As already noted, there is a substantial body of academic research detailing why property rights regimes should improve the efficacy and efficiency of resource management.⁴² This work is not merely theoretical, however. There is a growing body of research documenting how various sorts of property institutions, particularly various common property regimes or de facto property rights regimes grounded in custom or contract, have evolved in various societies to address potential common pool resource concerns.⁴³

Comparative analyses of private and political resource management are instructive.⁴⁴ Oyster beds in Maryland are managed by the state.⁴⁵ In neighboring Virginia, the beds are leased to private parties,⁴⁶ while in Washington, oyster beds are privately owned in fee simple.⁴⁷ As the theoretical literature would predict, privately managed oyster beds are healthier and more productive than those under state protection.⁴⁸ Comparisons between pri-

41. See Leal, *supra* note 30, at 49-54.

42. See *supra* notes 10-17.

43. See, e.g., THE POLITICAL ECONOMY OF CUSTOMS AND CULTURE: INFORMAL SOLUTIONS TO THE COMMONS PROBLEM (Terry L. Anderson & Randy T. Simmons eds., 1993) [hereinafter INFORMAL SOLUTIONS]; ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION (1990).

44. Comparative institutional analysis avoids the "nirvana" problem in which an obviously imperfect institutional arrangement is compared with a hypothesized ideal norm. As Harold Demsetz explains, this approach attempts "to assess which alternative *real* institutional arrangement seems best able to cope with the economic problem." Harold Demsetz, *Information and Efficiency: Another Viewpoint*, 12 J.L. & ECON. 1, 1 (1969) (emphasis added).

45. See Richard J. Agnello & Lawrence P. Donnelly, *Prices and Property Rights in the Fisheries*, 42 S. ECON. J. 253, 260 (1979).

46. See *id.*

47. Michael DeAlessi, *Fishing for Solutions: The State of the World's Fisheries*, in EARTH REPORT 2000 94-95 (Ronald Bailey ed., 2000).

48. *Id.*; see also Richard J. Agnello & Lawrence P. Donnelly, *Property Rights and Efficiency in the Oyster Industry*, 18 J.L. & ECON. 521 (1975) (comparing the productivity of Maryland and Virginia oyster fisheries).

vately leased and publicly managed oyster beds in Louisiana and Mississippi, respectively, yield similar results.⁴⁹

The effect of private ownership can also be seen in the explosion in aquaculture production, which more than tripled between 1985 and 1995.⁵⁰ Aquaculture now accounts for approximately one-quarter of global fish harvests, and one-third of fish harvested for human consumption.⁵¹ The explosion of aquaculture is relevant to the discussion of property rights in marine resources because the fundamental difference between aquaculture and traditional ocean fisheries is the "degree of control" which, "at its core, is largely defined by the strength of property rights."⁵² Aquaculture operations are privately owned in their entirety. As a result, producers need not worry about the tragedy of the commons and, therefore, have the incentive "to tinker, to experiment, and to innovate" in order to increase the productivity of their facilities.⁵³ Aquaculture production is not without problems,⁵⁴ but the explosion in aquaculture production, when contrasted to the depletion of marine fisheries, illustrates the importance of property rights in conserving resources.

The interest in property rights is also buoyed by the practical experience in several countries with property-based management systems, such as individual transferable quotas (ITQs). Under an ITQ system, the government sets the total allowable catch for a given season, and then allocates shares of the catch – quota – to individuals, boats, or firms as a form of transferable right. ITQ programs have been implemented in several countries with substantial success at increasing fishing efficiency, reducing overcapitalization, and lessening the ecological impact of fishing operations.⁵⁵ Particularly significant, ITQs have encouraged fishers to exercise greater stewardship. "It's the first group of fishers

49. Agnello & Donnelly, *supra* note 45.

50. DeAlessi, *supra* note 47, at 109.

51. James L. Anderson, *Aquaculture and the Future: Why Fisheries Economists Should Care*, 17 MARINE RESOURCE ECON. 133, 134 (2002).

52. *Id.* Of course, increased aquaculture production can contribute to other environmental concerns. See DEALESSI, *supra* note 27, at 54-55.

53. DEALESSI, *supra* note 27, at 54.

54. See *id.* at 54-57.

55. See, e.g., HANNES H. GISSURARSON, *OVERFISHING: THE ICELANDIC SOLUTION* (Inst. of Econ. Affairs ed., 2000); R. Quentin Grafton et al., *Private Property and Economic Efficiency: A Study of a Common-Pool Resource*, 43 J.L. & ECON. 679 (2000); Robert Repetto, *The Atlantic Sea Scallop Fishery in the U.S. and Canada:*

I've ever encountered who turned down the chance to take more fish," noted Philip Major of New Zealand's Ministry of Agriculture after the implementation of ITQs.⁵⁶ There have also been private initiatives to allocate annual harvests among firms in catch-limited fisheries so as to create quasi-property rights and capture the economic and ecological benefits that result. As discussed below, such cooperatives may develop where government resource managers have failed to implement ITQs or other property-based management regimes.⁵⁷

Property rights in natural resources do not require a sole proprietor of the resource. Ownership, even "sole-ownership," can take many forms, including a cooperative, corporation, family or community organization.⁵⁸ What is most important is that the property be allocated on a "scale" sufficient to eliminate – or at least mitigate – a commons problem. Whether the owner of a given resource is an individual, a corporation, or a community, the security of the property right enables the owner to plan the present and future use of the resource so as to maximize the resource's present value, which includes the discounted value of future harvests.⁵⁹

There are numerous examples of local, community-based fishery management regimes that could be characterized as "common property" regimes.⁶⁰ Such regimes "are a way of privatizing the rights to something without dividing it into pieces."⁶¹ Typically, such regimes "have evolved in places where the demand on a resource is too great to tolerate open access, so property rights in resources have to be created, but some other factor makes it impossible or undesirable to parcel the resource itself."⁶² The rules governing the use of the fishery are somewhat informal, often arising

A Natural Experiment in Fisheries Management Regimes, YALE SCH. FORESTRY & ENVT'L STUD. (2001).

56. DeAlessi, *supra* note 47, at 99 (quoting Philip Major of New Zealand's Ministry of Agriculture after the implementation of ITQs).

57. See *infra* notes 148-64 and accompanying text.

58. See Scott, *supra* note 6, at 116.

59. See *id.* at 122.

60. See, e.g., Donald R. Leal, *Community-Run Fisheries: Avoiding the 'Tragedy of the Commons'* 2 (Jane S. Shaw ed., PERC Pol'y Series, Issue No. PS-7, 1996); Ostrom, *supra* note 43.

61. Margaret McKean & Elinor Ostrom, *Common Property Regimes in the Forest: Just a Relic from the Past?*, 46 UNASLVVA 3, 6 (1995) (noting that "common property is shared private property.").

62. *Id.*

out of local custom or community practice. The management regimes typically evolved over time to increase the returns to the users of the resource. H. Scott Gordon observed that in most "primitive" societies, property rights of one form or another in renewable resources were common and served to ensure "orderly exploitation and conservation of the resource."⁶³ There have been efforts to adopt formal collective rules to limit catches and conserve the underlying resource, though such efforts have been challenged in court.⁶⁴

As noted earlier, the mobility of many fish populations can make property rights in fish populations costly to define and enforce. These costs are, in part, a function of existing technology.⁶⁵ Over time, human ability to define and mark territories or monitor given populations of a species improves, facilitating the application of property-based institutions. During the initial settlement of the American West, it was difficult to define and enforce property rights due to the vast expanses and relative lack of fencing materials. As populations increased, and the ability to assert control over water, grazing lands, and cattle herds became more important, the demand for technologies to define and enforce property rights increased. These pressures spurred the development of barbed wire and complex branding systems.⁶⁶ In much the same way, such branding and fencing technologies are beginning to emerge in the marine context, and may facilitate the further expansion of property rights in fisheries.⁶⁷ Such innovations range from fish scale analysis, which approximates branding or fingerprinting and catch sampling technologies, to remote tracking of fishing vessels using satellites and autonomous underwater vehicles (e.g. "robo-tuna").⁶⁸

The application of property rights to marine conservation does not only face economic and technical hurdles. The adoption of even

63. Gordon, *supra* note 7, at 134.

64. See *infra* notes 117-33 and accompanying text.

65. Yandle & Morriss, *supra* note 20.

66. Anderson & Hill, *supra* note 20, at 165-67.

67. See Daniel Huppert & Gunnar Knapp, *Technology and Property Rights in Fisheries Management*, in *THE TECHNOLOGY OF PROPERTY RIGHTS* 79-99 (Terry L. Anderson & Peter J. Hill eds., 2002); DeAlessi, *supra* note 27, at 48-53.

68. See DeAlessi, *supra* note 27, at 49-52; Huppert & Knapp, *supra* note 67, at 88-94; see also Gregory B. Christensen & Brian C. Gothberg, *The Potential of High Technology for Establishing Tradable Rights to Whales*, in *THE TECHNOLOGY OF PROPERTY RIGHTS* 101-21 (2001).

modest property-based systems is politically controversial.⁶⁹ ITQs can improve efficiency and facilitate conservation, but they may also lead to the redistribution of wealth or displacement of traditional fishing communities.⁷⁰ Although ITQ systems have been implemented in a few U.S. fisheries,⁷¹ Congress enacted a moratorium on the adoption of ITQs in additional fisheries in 1996.⁷² The moratorium is due to expire, yet Congress is expected to impose new requirements on the adoption and operation of future ITQ systems in U.S. waters.⁷³ Thus, while it is generally accepted that a move toward greater property rights in marine resources would be beneficial, such a move faces substantial obstacles.

III. PRIVATE ORDERING

*Order emerges perfectly from chaos not because of the way people are bossed about, but because of the way individuals react rationally to incentives.*⁷⁴

Property rights are often created by government action. Statutes or regulations may recognize or create rights in a previously unowned resource, such as radio spectrum,⁷⁵ or expand the number of sticks in the bundle of rights associated with a particular resource. Examples of the latter would include the recognition of conservation easements in land⁷⁶ or instream flow rights to water

69. See Scott C. Matulich et al., *Fishery Cooperatives as an Alternative to ITQs: Implications of the American Fisheries Act*, 16 MARINE RESOURCE ECON. 1, 1 (2001) (noting the continuing resistance to property rights approaches to fishery conservation).

70. See McCay, *supra* note 23, at 5 (summarizing the benefits of and potential concerns with ITQs).

71. *Id.*

72. Sustainable Fisheries Act § 108, 16 U.S.C. § 185.3 (1996) (establishing a moratorium on new fishery management plans from January 4, 1995 until October 1, 2002).

73. See, e.g., *More Time for IFQs*, BANGOR DAILY NEWS, Oct. 1, 2002, at A8.

74. MATT RIDLEY, *THE ORIGINS OF VIRTUE: HUMAN INSTINCTS AND THE EVOLUTION OF COOPERATION* 238 (1996).

75. See, e.g., Thomas W. Hazlett, *Assigning Property Rights to Radio Spectrum Users: Why Did FCC License Auctions Take 67 Years?*, 41 J.L. & ECON. 529 (1998).

76. See generally GERALD KORNGOLD, *PRIVATE LAND USE ARRANGEMENTS: EASEMENTS, REAL COVENANTS, AND EQUITABLE SERVITUDES* (1990). It should be noted that conservation easements are not without their problems. See, e.g., Julia D. Mahoney, *Perpetual Restrictions on Land and the Problem of the Future*, 88 VA. L. REV. 739 (2002).

in the western United States.⁷⁷ In each case, the resource in question – land, water – could be owned, but legislative action expanded the rights associated with the resource. In other cases, government entities may simply recognize rights that are observed and accepted within a local community.

Yet government is not the sole source of order and *de facto* property rights may emerge absent government action.⁷⁸ Harold Demsetz hypothesized that property rights emerge when the benefits of property arrangements exceed the costs of defining and enforcing such rights. In his words, “property rights develop to internalize externalities when the gains of internalization become larger than the cost of internalization.”⁷⁹ The relative costs and benefits of property rights are a function of many variables, including existing property rights, economic values, technology, cultural norms and relative homogeneity, and changing environmental conditions, among other factors.⁸⁰ The absence of property rights in complementary resources can increase the costs of enforcing any arrangements designed to limit the access to a common resource as well.⁸¹

There is a rich history of property and quasi-property arrangements developing organically (spontaneously) outside of the state’s formal apparatus, though such developments are often later recognized and sanctioned by the state.⁸² This history supports the claim that “informal social networks are capable of creating rules that establish property rights.”⁸³ Robert Ellickson’s hypothesis is that “members of a close-knit group develop and maintain norms whose content serve to maximize the aggregate welfare that mem-

77. See TERRY L. ANDERSON & PAMELA SNYDER, *WATER MARKETS: PRIMING THE INVISIBLE PUMP* 111-32 (1997).

78. See generally ROBERT C. ELICKSON, *ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES* (1991).

79. Demsetz, *supra* note 16, at 350.

80. See *id.*

81. Cheung, *supra* note 19, at 52.

82. See, e.g., INFORMAL SOLUTIONS, *supra* note 43; Elinor Ostrom, *Reformulating the Commons*, in *PROTECTING THE COMMONS: A FRAMEWORK FOR RESOURCE MANAGEMENT IN THE AMERICAS* 17-20 (Joanna Burger et al. eds., 2001) and the sources cited therein. A similar phenomenon has been documented in the area of intellectual property. See Robert P. Merges, *Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 CAL. L. REV. 1293 (1996).

83. ELICKSON, *supra* note 78, at 203.

bers obtain in their workaday affairs with one another."⁸⁴ The "close-knit" nature of the group can arise from cultural homogeneity, such as that which one may find in an isolated community, or from close contact over time due to shared experiences or occupations.⁸⁵ These norms, which constrain behavior much as formal legal rules, limit behavior within the group for mutual advantage. Such norms are the means through which many earlier societies avoided the "tragedy of the commons" in common pastures and the like.⁸⁶ They also can help to define or reinforce the group's cohesion.⁸⁷ These understandings can be formalized, as when courts recognize the longstanding traditions about who owns which whale,⁸⁸ but can also remain unsanctioned.

A noteworthy example of long-lasting, informal property rights in action are the "harbor gangs" of Maine's lobster fisheries.⁸⁹ Only gang members are allowed to harvest lobsters in designated areas.⁹⁰ There is no formal legal prohibition on outsiders fishing in gang territories, but the boundaries are defended through self-help.⁹¹ The regime exists "only because of the benign neglect of the state."⁹² If warnings to observe traditional territo-

84. *Id.* at 167. Wealth-maximizing norms are those norms that "minimize the members' objective sum of (1) transaction costs and (2) deadweight losses arising from failures to exploit potential gains from trade." *Id.* at 184.

85. See Terry L. Anderson & Bishop Grewell, *Property Rights Solutions for the Global Commons: Bottom-Up or Top-Down*, 10 DUKE ENVTL. L. & POL'Y F. 73, 79 (1999). The potential for norms that facilitate cooperation may be due as much, if not more, to repeated interactions than cultural homogeneity. Jonathan Macey suggests that it is "repeated interactions, not the closely knit nature of the groups, that leads to cooperation." Jonathan R. Macey, *Public and Private Ordering and the Production of Legitimate and Illegitimate Legal Rules*, 82 CORNELL L. REV. 1123, 1131 (1997).

86. See, e.g., Susan Jane Buck Cox, *No Tragedy on the Commons*, 7 ENVTL. ETHICS 49 (1985); OSTROM, *supra* note 43.

87. ELLICKSON, *supra* note 78, at 234-35 ("Constitutive norms can enhance group solidarity by structuring dealings in a way that requires members continually to reaffirm their ongoing trust.").

88. See, e.g., *Swift v. Gifford*, 23 F. Cas. 558 (D. Mass. 1872) (No. 13,696).

89. See generally James J. Acheson, *Capturing the Commons: Legal and Illegal Strategies*, in THE POLITICAL ECONOMY OF CUSTOMS AND CULTURE: INFORMAL SOLUTIONS TO THE COMMONS PROBLEM 69-83 (Terry L. Anderson & Randy T. Simmons eds., 1992) [hereinafter Acheson, *Capturing the Commons*]. See also JAMES J. ACHESON, THE LOBSTER GANGS OF MAINE (1988) [hereinafter ACHESON, LOBSTER GANGS].

90. ACHESON, LOBSTER GANGS, *supra* note 89, at 48.

91. See *id.* at 49.

92. Acheson, *Capturing the Commons*, *supra* note 89, at 80.

ries are not heeded, gang members will cut the buoy lines on the lobster traps of the offending fisher.⁹³ H. Scott Gordon notes that the harbor gangs effectively create "local monopol[ies]" that limit entry and consumption.⁹⁴ Where such measures are successfully enforced, they reduce overcapitalization and increase incomes in what would otherwise be open-access fisheries.⁹⁵ Political developments have weakened some of the territorial claims, but where the informal territories are enforced, lobster catch productivity is higher and fishing pressure is reduced.⁹⁶

Ellickson's research on property norms in the whaling industry during the eighteenth and nineteenth centuries further supports the hypothesis that people in close-knit groups will tend to develop norms to govern workaday situations common to the group.⁹⁷ Specifically, whaling communities developed substantive norms governing the right to capture and recover whale carcasses.⁹⁸ Each rule encouraged whaling by rewarding the ship that first harpooned the whale, while also allowing for others to harvest seemingly abandoned whales that had been killed or wounded by another ship.⁹⁹ Which rule a given fishery adopted was dependent upon the type of whale most commonly hunted there. A norm that a ship owned a whale, dead or alive, so long as the whale was fastened by a line or otherwise secured to the ship, made sense for slow and "mild" tempered whales, such as right whales.¹⁰⁰ A different norm was required "in fisheries where the more vigorous sperm whales predominated."¹⁰¹ The history of the whaling industry demonstrates that "informal social networks are capable of creating rules that establish property rights."¹⁰² Also notable in this case is that whalers appear to have adopted as norms the particular set of rules that maximized social welfare given the particular circumstances of each fishery.¹⁰³

93. *Id.* at 74.

94. Gordon, *supra* note 7, at 134.

95. *See id.*

96. Acheson, *Capturing the Commons*, *supra* note 89, at 74.

97. Robert C. Ellickson, *A Hypothesis of Wealth-Maximizing Norms: Evidence from the Whaling Industry*, 5 J.L. ECON. & ORG. 83, 84 (1989).

98. *Id.* at 88.

99. *Id.*

100. *Id.* at 89.

101. *Id.* at 90.

102. *Id.* at 94.

103. *Id.* at 87-88.

Whaling norms did not just "mimic" law; in effect "they created law."¹⁰⁴ Whalers treated the norms as binding, and generally agreed upon which norm was applicable in which circumstance.¹⁰⁵ Where conflicts arose, it tended to be because there was a factual dispute about whether a given ship or salvager had satisfied the requirements of the governing norm. Ellickson reports that courts routinely applied the governing norm to whaling disputes, rather than applying law from an external source.¹⁰⁶

One benefit of private ordering is the tendency to reduce the costs of rule creation. Rules that evolve from local cultural norms may require less effort to enforce than externally imposed rules.¹⁰⁷ When rights are established by those within the community ("residual claimants"), there is greater incentive to minimize the costs of rights creation and enforcement.¹⁰⁸ This is due in part to the fact that the community in question will bear the costs of rights definition and enforcement, and reap the benefits of the economic surplus generated by right creation. On the American Western Frontier, for example, residual claimant organizations, such as cattlemen's associations and mining camps, created more efficient property rules than did legislative measures such as the Homestead Act.¹⁰⁹ Also, nongovernmental responses to changing economic conditions are often more rapid than governmental responses.¹¹⁰ In sum, it is reasonable to conclude that, where it may operate, "private ordering generates substantive legal principles that are superior to those that the state produces."¹¹¹

A weakness of such informal systems is that they have difficulty with outsiders. Informal systems work only so long as all those participating understand the common rules, or if the informal entity has a means of excluding outsiders or enforcing rules. On the Western Range, for example, cattlemen established customary range rights, enforced by line camps and cattlemen's as-

104. *Id.* at 85.

105. *Id.* at 88.

106. *See id.* at n.5 and the cases cited therein.

107. Townsend, *supra* note 36, at 40.

108. *See* Anderson & Hill, *supra* note 20, at 443. This also may be an argument in favor of "corporate" rather than "cooperative" governance structures to manage common pool resources. Townsend, *supra* note 36, at 40-43.

109. *See* Anderson & Hill, *supra* note 20, at 443-48.

110. Cheung, *supra* note 19, at 68.

111. Macey, *supra* note 85, at 1140.

sociations.¹¹² Newcomers were excluded from the range by excluding them from participation in the annual cattle roundups that were necessary to run cattle on the range.¹¹³ This system began to break down when sheepherders entered the Western Range. Sheepherders had no need to participate in the annual roundups, so it was difficult to exclude them from the range and maintain the customary range right system.¹¹⁴

With growth in size and heterogeneity, private ordering generally needs to become more formal if it is to survive. Custom and practice will either become recognized by the formal legal system – e.g., common law court decisions recognizing the customary rules – or the understanding will become formalized through legislation or written contracts. Collective institutions, such as neighborhood associations, resource user cooperatives, and the like, can be created with formal responsibilities. In such cases, contracting replaces customary dealing. This can create new problems, however, as the costs of contracting can be greater than the costs of reaching a shared understanding in a small homogenous community. Nonetheless, the operational principle is the same, and contracting will occur where the benefits to be gained are greater than the transaction costs involved.¹¹⁵

The private creation of rights and obligations through contract can be particularly valuable – and costly. On the one hand, contracts embody the contracting parties' subjective valuations of potential outcomes. Thus, contracts are far superior to government regulations and other third-party controls at reducing dead-weight losses.¹¹⁶ At the same time, the transaction costs involved in contracting and enforcing contractual agreements can be particularly high.¹¹⁷ Norms that arise from cultural homogeneity or common understandings can reduce such costs, but such norms do not always exist. In the fishery context, such contract-facilitating norms are more likely in those industries, areas, and communities in which the participants have an extended course of dealing. It is

112. See, e.g., Anderson & Grewell, *supra* note 85, at 80-82.

113. *Id.* at 81.

114. *Id.* at 82.

115. Additionally, "there is no reason why unrelated entities cannot simply decide to become closely knit when it is in their interest." Macey, *supra* note 85, at 1131.

116. ELLICKSON, *supra* note 78, at 246.

117. *Id.*

also worth noting that the dividing line between contract and "custom" is often illusory. As Steven Cheung notes, "[S]ome asserted 'customs' are, in fact, market practices in which the contractual terms are not obvious."¹¹⁸ They are contracts nonetheless.

IV. OBSTACLES TO PRIVATE ORDERING

The process of private ordering is not wholly independent of positive law. Existing legal rules and institutions affect the viability of such arrangements and the trajectory of their development. Native Americans had well-established property rights to fishing sites along the Columbia River prior to the arrival of European settlers. Later, these rights were effectively destroyed by the State of Washington, which imposed its own rules governing local fisheries.¹¹⁹ Legal traditions can also facilitate, or inhibit, reforms that would facilitate private ordering.

As discussed above, private ordering occurs when the benefits gained from such arrangements exceed the related transaction costs.¹²⁰ Legal institutions have a tremendous impact on such costs. The recognition, valuation, and enforcement of private property rights, for example, can facilitate private ordering by clarifying the legal entitlements of those engaged in negotiations, contracts, or other interactions. The lack of property rights muddies the water, obscuring the nature and extent of the relevant legal entitlements, thereby increasing the transaction costs. At the extreme, "the prohibition of voluntary negotiations makes the cost of transacting infinite."¹²¹

Of particular interest for this paper is the effect that antitrust law has on the potential for private ordering in marine fisheries.¹²²

118. Cheung, *supra* note 19, at 57 n.16.

119. See Robert Higgs, *Legally Induced Technical Regress in the Washington Salmon Fishery*, 7 RES. ECON. HIST. 55, 55-56 (1982).

120. See *supra* notes 78-81.

121. Demsetz, *supra* note 16, at 348. Demsetz's claim here is obviously an exaggeration – illegal negotiations and contracts are quite common – but the point is quite valid. Indeed, it is common knowledge that legal prohibitions greatly increase the transaction costs of negotiation, particularly for otherwise law-abiding citizens.

122. The conflict between antitrust law and marine conservation is explored in further depth in Jonathan H. Adler, *Antitrust Barriers to Cooperative Fishery Management*, in *EVOLVING PROPERTY RIGHTS IN MARINE FISHERIES* (Donald Leal ed., forthcoming 2003) and Jonathan H. Adler, *Conservation through Collusion* (2002) (unpublished manuscript, on file with author).

Where the costs of transacting or coordinating are low in comparison to the potential gains from such organization, fishers will organize various collective institutions to enhance fisher income, manage fish harvests, and support conservation. Such organizations traditionally operate to regulate fishing activity and, in many cases, limit the entry of newcomers. Under existing antitrust law, however, such arrangements are often illegal as agreements "in restraint of trade."¹²³ Even if antitrust law's prohibition does not make the cost of such arrangements "infinite," it does increase the relative costs of such institutions, undermining their viability. If the likelihood of private ordering is a function of the relative costs and benefits of such institutional development, a legal rule that significantly increases the costs of private ordering can effectively prohibit such developments.

The conflict between conservation and antitrust law arises because what the former demands, the latter condemns. The aim of antitrust law is to protect consumers from anti-competitive conduct that reduces output and increases prices for consumers. Archetypal anti-competitive conduct is the creation of a "horizontal" agreement among competitors – a cartel – that seeks to raise prices for a good or service to super-competitive levels by reducing output. Such arrangements are illegal under the Sherman Act¹²⁴ because such arrangements have the tendency to reduce consumer welfare.

The Organization of Petroleum Exporting Countries (OPEC) is a good example of the sort of horizontal cartel prohibited under U.S. law.¹²⁵ OPEC members seek to increase the price of crude oil by collectively agreeing to reduce production to set levels. Ironically, were OPEC concerned about the conservation of its petroleum reserves, it might engage in the very same behavior – cutting oil production – which would have the same effect on consumers – increased prices. Users of a common pool resource who wish to

123. See Sherman Act, 15 U.S.C. § 1 (2000).

124. *Id.* §§ 1-7.

125. OPEC has been described as "the greatest cartel of our time." W. KIP VISCUSI ET AL., *ECONOMICS OF REGULATION AND ANTITRUST*, 611-13 (2d ed. 1995). OPEC is also a good example of how cartel restrictions can be difficult to enforce absent a viable enforcement mechanism. The more successful the cartel is at raising prices, the greater the incentive each member has to cheat. See generally 1 *HANDBOOK OF INDUSTRIAL ORGANIZATIONS* 425-30 (Richard Schmalensee & Richard D. Willig eds., 1989).

conserve that resource typically have little choice but to reduce their consumption. Such restraint may help conserve the resource, but it will also reduce consumer welfare inasmuch as it leads to higher prices. Indeed, the most direct agreement to constrain consumption of a common-pool resource to sustainable levels will constitute a *per se* violation of antitrust law. As the Supreme Court explained in 1940, "a combination formed for the purpose and with the effect of raising, depressing, fixing, pegging, or stabilizing the price of a commodity in interstate or foreign commerce is illegal *per se*."¹²⁶ As a result, if it is necessary to reduce the consumption of a natural resource, such as a marine fishery, only the government is permitted to adopt such conservation measures. The same measures adopted voluntarily by the users of the resource are against the law.

The history of the Gulf Coast Shrimpers & Oystermans Association (GCSOA) provides a good example of the way antitrust law inhibits private ordering in marine fisheries. The GCSOA was created in the 1930s to increase shrimpers' revenue by regulating shrimp harvests and controlling prices along the Mississippi Coast in the Gulf of Mexico.¹²⁷ The GCSOA negotiated exclusive contracts with local packers.¹²⁸ GCSOA members could only sell their catch to contracting packers, and the packers agreed to pay GCSOA members a minimum price.¹²⁹ GCSOA rules also served to exclude new entrants from the fishery.¹³⁰

The GCSOA was successfully prosecuted for an illegal price-fixing arrangement under the Sherman Act.¹³¹ To be sure, the union did set prices with shrimp packers in an effort to increase its members' incomes, but not in the fashion ordinarily targeted by antitrust enforcement. The minimum prices served a conservation

126. *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150, 223 (1939). Antitrust doctrine has become a bit more nuanced since 1939, but the *Socony-Vacuum* case is still considered the "definitive statement" of the law regarding price-fixing. RICHARD A. POSNER, *ANTITRUST LAW* 36-37 (2d ed. 2001).

127. *Johnson & Libecap*, *supra* note 23, at 1008.

128. *See id.*

129. *Gulf Coast Shrimpers & Oystermans Ass'n v. United States*, 236 F.2d 658, 660 (5th Cir. 1956). It is worth noting that the GCSOA members did not merely agree to set prices amongst themselves. *See Johnson & Libecap*, *supra* note 23, at 1008. Contracts with the packers were necessary to ensure that union members complied with the union's rules. *See id.*

130. *See Gulf Coast Shrimpers*, 236 F.2d at 661.

131. *Id.* at 658.

purpose. The prices were set based upon the size of the shrimp, measured in tails per pound.¹³² The minimum price for small shrimp set by the GCSOA was generally set *above* the market price; the price for larger, more valuable shrimp, was not.¹³³ In this fashion, the price scheme discouraged the harvest of small, immature shrimp early in the shrimping season because the processors would be reluctant to meet the required price. This ensured there would be larger and more valuable shrimp for harvest later in the season. Their efforts were successful, as Mississippi shrimp prices were generally higher than those in neighboring Louisiana, largely due to the greater proportion of larger shrimp in the harvest.¹³⁴ As Gary Libecap notes, this price scheme, combined with GCSOA's power to restrict entry (assert property rights) to the fishery, increased member incomes, even though they sold their shrimp to a national market.¹³⁵

The GCSOA experience shows that "private group regulations of fisheries could be an alternative to government regulation if that option were politically acceptable."¹³⁶ Indeed, decades after the prosecution of the GCSOA for antitrust violations, Gulf states were enforcing shrimp harvest regulations on minimum shrimp size that had the same effect.¹³⁷ The government regulations, however, made no effort to limit entry to the fishery.¹³⁸ As a result, the Gulf shrimp fishery is overcapitalized. By the late 1980s, it was estimated that the annual shrimp catch could be harvested with one-third the number of boats.¹³⁹

Gulf Coast Shrimpers & Oystermans Ass'n v. United States was not an isolated case. In the 1930s and 1940s there were several antitrust actions against fishers' unions throughout the country.¹⁴⁰ Sometimes the cases were brought by government authorities. In others, private plaintiffs used the antitrust stat-

132. Johnson & Libecap, *supra* note 23, at 1008.

133. LIBECAP, *supra* note 22, at 88.

134. *Id.* at 89; Johnson & Libecap, *supra* note 23, at 1010 n.21.

135. LIBECAP, *supra* note 22, at 88.

136. *Id.* at 90.

137. Johnson & Libecap, *supra* note 23, at 1009-10.

138. *Id.* at 1009-10.

139. See Leal, *supra* note 30, at 45-46.

140. See, e.g., *Local 36 of Int'l Fishermen & Allied Workers of Am. v. United States*, 177 F.2d 320 (9th Cir. 1949); *Hawaiian Tuna Packers, Ltd. v. Int'l Longshoremen's & Warehousemen's Union*, 72 F. Supp. 562 (D. Haw. 1947); *Columbia River Packers Ass'n v. Hinton*, 34 F. Supp. 970 (D. Or. 1939).

utes to seek treble damages against the defendants.¹⁴¹ In each case, the aspects and practices of the fishers' unions that provided potential conservation benefits were precisely what made them objectionable to antitrust enforcers. Patrick McHugh and the Atlantic Fisherman's Union, for instance, were prosecuted because they "effectively limited the quantity and species of fish landed in New Bedford."¹⁴² Regardless of whether McHugh was a forward-looking conservationist or a price-gouging rent-seeker, his union helped prevent overfishing. As the court explained, "[H]ad it not been for defendants' illegal restraints, a 'much greater' volume of scallops and other fish would have been brought into and sold in the port of New Bedford."¹⁴³

Another notable case involves the California sardine fishery. In 1940, Frank Manaka sued the Monterey Sardine Industries, Inc., a cooperative association of fishing boat owners, and the Del Mar Canning Co. for conspiring to set prices and restrict entry into the California sardine fishery.¹⁴⁴ Under an agreement among the association, the cannery, and the local fishermen's union, the association set the price for which its members' fish were sold to the cannery.¹⁴⁵ The association served both pecuniary and conservation purposes. On the one hand, it restricted entry by non-local fishers and helped maintain high fish prices and member profits. On the other hand, it limited harvesting, thereby helping to conserve fish stocks.¹⁴⁶

As in the GCSOA case, the court found the association in violation of federal antitrust law. The district court held that:

[S]uch an association as that of the boat owners is not freed from the restrictive provisions of the anti-trust act, because they profess in the interest of conservation of important food fish to regulate the price and the manner of taking such fish

141. Under section 4 of the Clayton Act, 15 U.S.C. § 4 (2000), any person who is injured by actions which are illegal under federal antitrust law may file suit in federal district court, *id.*, and may seek recovery of "threefold the damages by him sustained, and the cost of suit, including a reasonable attorney's fee." *Id.* § 15.

142. *McHugh v. United States*, 230 F.2d 252, 254 (1st Cir. 1956).

143. *Id.*

144. *Manaka v. Monterey Sardine Indus.*, 41 F. Supp. 531 (N.D. Cal. 1941).

145. *Id.* at 533.

146. After Manaka was prevented from selling fish in Monterey, the association offered to let him come back to fish to replace a local boat which had been disabled. *Id.* This suggests that at least one purpose of the association was to maintain an upper limit on the harvest level.

"unauthorized by legislation and uncontrolled by proper authority."¹⁴⁷

In other words, the association's conduct was no less exclusionary because it served, in part, to conserve fish stocks. An agreement among otherwise-competing users of a common pool resource to conserve the resource by restricting their aggregate output is illegal. Monterey Sardine Industries was found guilty of conspiracy in restraint of trade under the Sherman Act, and Manaka was awarded triple damages under the Clayton Act.¹⁴⁸

If anything, the ruling in *Manaka v. Monterey Sardine Industries* had worse effects on conservation than did the GCSOA case. In the 1930s, the California sardine fishery was at its peak, yielding over 500,000 tons of fish per year.¹⁴⁹ By the early 1950s, the fishery was beginning to collapse; "the pressures on the fishery were too great, and by 1952 for all practical purposes, the commercial sardine fishery was finished."¹⁵⁰ Perhaps the timing of the fishery's collapse is coincidental.¹⁵¹ The collapse may have been inevitable so that sardine harvest levels would have depleted the fishery even if Monterey Sardine Industries' collusive arrangement had been permitted to survive. On the other hand, antitrust law may have destroyed a well-functioning cooperative institution that was capable of forestalling or mitigating the sardine fishery's collapse.

The bulk of the reported antitrust prosecutions against fisher unions occurred during the 1940s and 1950s.¹⁵² Yet the reverberations of these cases are still felt in fisheries. "The mere threat of antitrust investigation adds another chilling breeze to the already

147. *Id.* at 534 (quoting *Columbia River Packers Ass'n v. Hinton*, 34 F. Supp. 970, 975 (D. Or. 1939)).

148. *Id.* at 536; see 15 U.S.C. § 15(a) (2000).

149. *LIBECAP*, *supra* note 22, at 76.

150. *Id.* at 77.

151. For an historical account discussing other factors in the fishery's collapse, see ARTHUR F. McEVoy, *THE FISHERMAN'S PROBLEM: ECOLOGY AND THE LAW IN THE CALIFORNIA FISHERIES, 1850-1980*, at 153-55 (1986).

152. Major cases included: *Columbia River Packers Ass'n v. Hinton*, 315 U.S. 520 (1942); *McHugh v. United States*, 230 F.2d 252 (1st Cir. 1956); *Local 36 of Int'l Fishermen & Allied Workers of Am. v. United States*, 177 F.2d 320 (9th Cir. 1949); *Manaka v. Monterey Sardine Indus.*, 41 F. Supp. 531 (N.D. Cal. 1941); *Hawaiian Tuna Packers, Ltd. v. Int'l Longshoremen's and Warehousemen's Union*, 72 F. Supp. 562 (D. Haw. 1941). *Johnson & Libecap*, *supra* note 23, at 1008 n.9. There are exceptions. See, e.g., *United States v. Hinote*, 823 F. Supp. 1350 (S.D. Miss. 1993).

challenging climate for forming community organizations to conserve natural resources.”¹⁵³ Subsequent efforts to create cooperative ventures have been threatened with prosecution.¹⁵⁴ This chilling effect is particularly powerful because the Clayton Act provides for treble damages in successful private antitrust enforcement actions.¹⁵⁵ This creates a powerful incentive for fishers to stay well clear of those activities that could run afoul of antitrust laws.¹⁵⁶ Surveying self-governance arrangements in fisheries, Ralph Townsend encountered substantial reluctance by fishers in the United States and Canada to discuss such arrangements for fear of government regulation or prosecution.¹⁵⁷

In defense of antitrust enforcement, it is important to note that most of the collective fisher organizations prosecuted for antitrust violations were motivated by pecuniary interest. It appears that the union organizers were more concerned with increasing the incomes of their membership than in preserving our world's marine heritage. It is also the case that not all collective arrangements designed to increase fish prices had conservation effects. In at least one case, the court in question found that demand was sufficiently inelastic that the local union's efforts to drive up prices would not have reduced consumption.¹⁵⁸ Nonetheless, in most cases it appears the collusive arrangements reduced harvest levels, thereby relieving, if not altogether eliminating, pressures on local fish populations, and that the unions were aware of the potential conservation benefits of their actions. There should be little doubt that some opportunities for conservation were lost due to the prosecution of such arrangements. If nothing else, the collusion among fishers created collective entities with interest and ability in con-

153. Bruce Yandle, *Antitrust and the Commons: Cooperation or Collusion?*, 3 THE INDEP. REV. 37, 50 (1998).

154. See Johnson & Libecap, *supra* note 23, at 1007 n.8 (stating that the Federal Trade Commission warned that voluntary agreements to limit the number of boats in the fishery would violate the Sherman Act).

155. 15 U.S.C. § 15(a) (2000).

156. The modest exemption provided under the Fisherman's Collective Marketing Act is insufficient to mitigate this effect. See Joseph M. Sullivan, *Harvesting Cooperatives and U.S. Antitrust Law Recent Developments and Implications* 3-4, at <http://oregonstate.edu/dept/IIFET/2000/papers/sullivan.pdf> (July 11, 2000) (prepared for "Microbehavior and Macroresults: IIFET 2000" at Oregon State University, July 11, 2000).

157. Townsend, *supra* note 1, at 257.

158. See *Hawaiian Tuna Packers, Ltd. v. Int'l Longshoremen's & Warehousemen's Union*, 72 F. Supp. 562 (D. Haw. 1947).

serving the underlying resource that could well have safeguarded the resource as conservation concerns became more acute.¹⁵⁹

V. OVERCOMING THE OBSTACLES

*The threats of wasted and destroyed fisheries, extinguished species, and diminished water quality in rivers are real, but the possibilities that associated monopoly restrictions will impose significant costs on the economy are purely speculative and, if realized, are apt to be small and fleeting.*¹⁶⁰

The obstacles to private ordering in marine fisheries are not insurmountable. Even the restrictions imposed by antitrust law can be mitigated, if not avoided altogether through informality. If arrangements are not formalized, they may not be subject to antitrust prosecution. Not all collective arrangements among fishers are formalized in contracts. Particularly in local, homogeneous communities, cooperation among otherwise-competing firms or individuals may be facilitated by customs and cultural norms.¹⁶¹ As noted above, lobstermen in Maine have effectively divided local lobster fisheries into discrete territories and informally agreed to limit the lobster catch.¹⁶² Harbor gangs enforce these boundaries among themselves and against outsiders. Were these agreements formalized, however, they would almost certainly be illegal. Informality may lessen the risk of antitrust prosecution, but it also can undermine the effectiveness of the collective arrangement. As a result, the property rights are less secure and depend upon the community's ability to maintain relative homogeneity and agreement.

In recent years, modest fisher cooperatives have gained acceptance under antitrust law.¹⁶³ In some U.S. fisheries, resource users have found it possible to create cooperative entities to assist with fishery management and allocate shares among fishers despite the strictures of antitrust law. The cooperatives are created to rationalize the fishery management and address overcapitaliza-

159. See LIBECAP, *supra* note 22, at 90 (noting that the "success" of the various unions "indicates that private group regulations of fisheries could be an alternative to government regulation if that option were politically acceptable").

160. Yandle, *supra* note 153, at 40.

161. OSTROM, *supra* note 43.

162. See *supra* notes 89-96.

163. See generally Sullivan, *supra* note 156.

tion, waste, and inefficiency through the creation of de facto ITQ systems. Historically, such collective entities were considered "within the 'market allocation' class of *per se* violations that are illegal" under federal antitrust law.¹⁶⁴ In fisheries where catch limits have already been imposed by regulatory authorities, however, the federal government has been more receptive to cooperative arrangements, such as harvesting cooperatives, that allocate catch shares among licensed fishers.

One example of such a cooperative is the Pacific Whiting Conservation Cooperative (PWCC). Prior to creation of the PWCC, the U.S. Pacific Coast whiting fishery was subject to strict catch limits, fishing licenses were limited but transferable, and the total catch allowed was divided among several classes of fishing firms: on-shore processing plants, "mothership" processors, and catcher/processors.¹⁶⁵ Within each class the fishery adopted an "olympic" system, whereby any licensed fishing firm was entitled to catch as much of the harvest allocated to its class as it was able. In practice, this encouraged a race to fish, as each fishing firm sought to harvest as many fish as it could within a short period of time so as to capture the greatest share of the harvest allocated to its class. While the total catch limit helped conserve the fishery, the competitive pressure of the "olympic" system fostered overcapitalization, inefficiency, and waste, including substantial by-catch – the incidental catching of non-target fish species. The race to fish was so intense that under the existing rules, the pressure to catch fish quickly was so great that the entire quota would be harvested in just fourteen days.¹⁶⁶

By 1996, there were only four catcher/processors left in the fishery.¹⁶⁷ These firms recognized that the allocation of property rights to portions of the catch – ITQs or some other share allocation – would yield substantial benefits. Specifically, the firms recognized they could cut costs and increase product recovery by as much as twenty-five percent by allocating quota shares, thereby

164. *Id.* at 2.

165. A "mothership" processor is a ship that has on-board processing capability but does not itself catch fish. A catcher/processor is a ship that catches and processes its own fish on-board.

166. Bruce Ramsey, *Companies Agree to End "Race for Fish,"* SEATTLE POST-INTELLIGENCER, May 31, 1997, at B8.

167. Sullivan, *supra* note 156, at 4.

eliminating the race to fish.¹⁶⁸ The formal creation of ITQs in the fishery was not an option, however, due to a Congressionally enacted ITQ moratorium.¹⁶⁹

To obtain the benefits of a property-based management system, the catcher/processors created the PWCC.¹⁷⁰ Because there were so few firms involved, each sharing a common interest, the coordination costs were low enough to reach a quick agreement on how to divide the catch.¹⁷¹ They further agreed to make their allocations transferable among each other.¹⁷² The Antitrust Division of the Justice Department consented to the formation of the cooperative because the four firms agreed to continue processing, marketing, and selling their products on a competitive basis, and because the agreement would not further reduce fishery output.¹⁷³ Joel Klein, the then-acting Assistant Attorney General for Antitrust, observed that the harvest allocation was “unlikely to reduce output or increase price under any scenario.”¹⁷⁴ To the contrary, due to increased efficiency, the cooperative would increase the volume of fish available to consumers from the same harvest level.

The results of the cooperative were impressive. As under ITQ programs, “more efficient operators leased shares from less efficient ones” and firms reduced the number of fishing vessels in the fishery.¹⁷⁵ The recovery rate – the amount of saleable product recovered from fish – increased substantially. Indeed, the four firms produced over five million pounds more food from the same volume of fish caught – often of higher quality – while using fewer boats.¹⁷⁶ At the same time, by-catch declined.¹⁷⁷ To enforce the arrangement and prevent cheating, the cooperative contracted with a fishery harvest monitoring service, which also enabled fed-

168. *Id.*

169. *Id.* at 1. Sullivan uses the term individual fishing quota (IFQ).

170. *See id.* at 4-6.

171. Ramsey, *supra* note 166; *see* Sullivan, *supra* note 156, at 5.

172. Sullivan, *supra* note 156, at 5.

173. Ramsey, *supra* note 166.

174. *Id.*

175. Sullivan, *supra* note 156, at 5.

176. J. Leblanc, *United States' Fishery Cooperatives: Rationalizing Fisheries Through Privately Negotiated Contracts*, in *FAO FISHERIES TECHNICAL PAPER 404/2—USE OF PROPERTY RIGHTS IN FISHERIES MANAGEMENT* (Ross Shotton ed., Food & Agric. Org. 2000).

177. Sullivan, *supra* note 156, at 5; Leblanc, *supra* note 176.

eral regulators to increase the accuracy of the seasonal catch allocation.¹⁷⁸

The PWCC was so successful that it spawned another private harvesting agreement in the North Pacific pollock fishery, the Pollock Conservation Cooperative.¹⁷⁹ This development was facilitated by the American Fisheries Act,¹⁸⁰ which subdivided the pollock fishery much like the whiting fishery was divided.¹⁸¹ Again the Justice Department declined to prosecute, citing the potential pro-competitive impacts of the cooperative.¹⁸² In 2002, a cooperative in Alaska's Chignik salmon fishery began as well.¹⁸³

Creation of the whiting and pollock harvesting cooperatives was facilitated by the imposition of total catch limits in each fishery. With fishery output already limited by regulation, antitrust enforcers had little reason to fear that market allocation among fishery participants would reduce consumer welfare by further reducing output and increasing prices. Indeed, by eliminating the "race to fish," the market allocation agreements had the opposite effect. The cooperatives also produce some ecological benefit, most notably the reduction in bycatch and greater seasonal balance in fishing patterns. Cooperatives also have some advantages over quasi-property rights schemes in that they are "unencumbered" by the sorts of restrictions on concentration, leasing, and transfer that are imposed on ITQ regimes.¹⁸⁴

Congress could further facilitate private ordering in fisheries by providing explicit statutory authorization for the creation of fishing cooperatives or conservation associations. This could be achieved either by enacting a blanket antitrust exemption or by expanding the limited exemption provided by the Fisherman's Col-

178. Sullivan, *supra* note 156, at 6.

179. AT-SEA PROCESSORS ASS'N, PRELIMINARY ASSESSMENT OF THE POLLOCK CONSERVATION COOPERATIVE (Dec. 1999), at <http://www.atsea.org> (on file with author).

180. Pub. L. No. 105-277, 112 Stat. 2681-616 (1998).

181. This history is summarized in Matulich et al., *supra* note 69, at 2-4.

182. Press Release, United States Department of Justice, 00-86, Justice Department Approves Proposal by the Pollock Conservation Cooperative (Feb. 29, 2000), available at <http://www.usdoj.gov/opa/pr/2000/February/086at.htm>.

183. Wesley Loy, *Co-op Revolutionizes Chignik Fishery*, ANCHORAGE DAILY NEWS, June 22, 2002, at D1.

184. Keith R. Criddle & Seth Macinko, *A Requiem for the IFQ in U.S. Fisheries*, 24 MARINE POL'Y 461, 465 (2000).

lective Marketing Act.¹⁸⁵ An alternative would be to create a mechanism whereby NMFS or regional fishery management councils could authorize the creation and operation of a fishing cooperative.

The devolution of management authority from government agencies to resource user organizations has proven successful in New Zealand, where management responsibility for the southern scallop fishery has been devolved to the Challenger Scallop Enhancement Company (CSEC), a private association of quota holders within the fishery.¹⁸⁶

The New Zealand government created formal ITQs in the fishery in the mid-1990s.¹⁸⁷ The creation of property rights in the fishery through the ITQs reduced the transaction costs associated with creating a collective self-governing institution for the fishery.¹⁸⁸ Once the ITQs were allocated, the quota holders organized into the CSEC to facilitate stock enhancement efforts, such as seeding, and to develop harvesting rules.¹⁸⁹ Among other things, the CSEC determines where and when fishing can occur, manages enhancement efforts, supports research, and collects funds from its members.¹⁹⁰ The CSEC conducts an annual survey of scallop stocks and oversees a shellfish safety program.¹⁹¹ Merely creating ITQs or other property rights in fishery stocks would facilitate the formation of similar entities in U.S. fisheries. Yet more is possible.

The CSEC not only coordinates fishing activities and supports enforcement like the pollock and whiting cooperatives, it also has management responsibilities that would be prohibited under U.S. law. Most notably, the CSEC has de facto responsibility for setting

185. 15 U.S.C. § 521 (1997).

186. Basil M. H. Sharp, *New Zealand's Fisheries Management* 162 (unpublished manuscript, on file with author) (prepared for PERC's Thirteenth Political Economy Forum "Evolving Property Rights in Marine Fisheries" at Big Sky, Montana).

187. *Id.* at 150.

188. See Townsend, *supra* note 1, at 257-60; Anthony Scott, *Obstacles to Fishery Self-Government*, 8 MARINE RESOURCE ECON. 187, 196-97 (1993).

189. Sharp, *supra* note 186, at 162; Townsend, *supra* note 1, at 247.

190. Sharp, *supra* note 186, at 162.

191. Townsend, *supra* note 1, at 249 (stating that the CSEC "has taken on the full range of activities that many presume only a government can manage: shellfish safety, research, stock enhancement, management and enforcement of catch levels, and resolution of gear conflicts among fisheries").

harvest levels and quotas.¹⁹² The New Zealand Minister of Fisheries still sets a total allowable catch for the scallop fishery, but this level is set well above the level that is fished.¹⁹³ Through the CSEC, scallop quota owners lease a substantial portion of their quota holdings back to the CSEC where they are held and not fished.¹⁹⁴ In other words, the CSEC has taken responsibility for controlling the harvest level by limiting the output of its members below those levels set by the government.¹⁹⁵ Such action would be a *per se* violation of antitrust law in the United States.¹⁹⁶

If legislative or administrative measures to facilitate private ordering in marine fisheries are not forthcoming, it is possible that cooperative associations may find relief in court. Courts often recognize that agreements in restraint of trade serve additional purposes, such as the need to overcome free-rider problems or produce off-setting efficiencies.¹⁹⁷ In principle, there is no reason why such analysis should not accommodate conservation efforts. Specifically, there is no reason why the conservation benefits of a collective entity should not be weighed against its potential anti-competitive conduct. This is particularly true in the case of conservation, where what antitrust condemns is that which conservation requires. As Bruce Yandle, a former economist at the Federal Trade Commission observes, "cooperative efforts by fishermen to restrict access to a commons, thereby sustaining a fishery, serve the joint interests of the fishermen and consumers."¹⁹⁸

If nothing else, increasing globalization of fish markets and increased competition from aquaculture should reduce antitrust scrutiny. Concerns about anti-competitive conduct are at their nadir when those engaged in allegedly anti-competitive conduct do not have market power. If shrimpers in the Gulf of Mexico, for example, engage in collusive behavior to restrict their catch and shift the shrimp harvest to later in the season, this is only a con-

192. Townsend, *supra* note 1, at 247; see Sharp, *supra* note 186, at 162.

193. Townsend, *supra* note 1, at 247.

194. *Id.*

195. *See id.*

196. It is worth noting that the CSEC needed to obtain an exemption from limits on aggregate quota holdings designed to limit concentration within the industry. *Id.*

197. *See* RICHARD A. POSNER, ANTITRUST LAW 28-32 (2d ed. 2001) (discussing the beneficial effects of monopolies in cases with defendants who are "benign cartels").

198. Yandle, *supra* note 153, at 49.

cern if they have the ability to increase market prices for shrimp. If, however, shrimp harvested from other locations competes directly with Gulf shrimp, the ability of the Gulf shrimpers to restrict market output and increase market prices is limited, and antitrust concerns should abate. "In the absence of government sanctions that block competitive entry, it is difficult to see how regional fishing associations . . . could effectively cartelize major product markets."¹⁹⁹ With global markets, fisheries will compete with one another – and with other food sources – for market share.²⁰⁰

The development of fisher cooperatives in several fisheries, however modest, illustrates that some private ordering will occur so long as there are substantial benefits to be gained therefrom. In other words, where the costs of private ordering are less than the costs of maintaining the status quo in fisheries, some amount of private ordering should occur. Addressing legal obstacles to such developments, such as antitrust law's prohibition on collective arrangements that reduce fishery consumption, will further facilitate private ordering in marine fisheries by reducing the costs of such activities. So, too, would clarifying the legal rights and entitlements of existing and potential resource users through the creation of ITQs or some other property-based management system. Such institutional reforms should improve fishery management by creating greater opportunities for those most dependent upon marine resources to engage in stewardship and conservation efforts.

VI. CONCLUSION

Conserving marine resources requires controlling access and reducing output. At issue is who, or what institution, should establish and enforce such controls. This is a question of institutional capacity as much as it is the inherent desirability of one institutional framework over another. The American legal tradition may disfavor property rights in wildlife, yet it may be the case that reliance upon government regulation to conserve some living marine resources is to condemn them to exhaustion.

Given the historical failure of government regulation to ensure sustainable utilization of fisheries, it is puzzling that existing law

199. *Id.*

200. Edwards, *supra* note 34, at 266.

implicitly assumes that a politically influenced regulatory agency or a management council is a better means of controlling output than a self-interested owner, whether an individual, an association, or some other collective institution. A wealth of research on natural resource management, including fishery management, suggests that private owners will engage in better stewardship than the political process.²⁰¹

Environmental problems are typically characterized as resulting from "market failure" – a failure of private institutions to safeguard environmental resources. Yet the experience with marine resources suggests that "government failure" or "political failure" would be a more accurate diagnosis of the problem. It is not that private institutions have failed, it is that we have failed to have private institutions, and government policy is sometimes the cause.²⁰² Moreover, the failure of private institutions to produce "optimal" results in some, even many, instances does not mean that political management will produce better outcomes;²⁰³ "the relevant question is whether private ordering reaches a result that is superior to the result public ordering reaches."²⁰⁴

Existing legal institutions need to leave room for private institutions to operate. As Ellickson noted at the close of *Order Without Law*, "lawmakers who are unappreciative of the social conditions that foster informal cooperation are likely to create a world in which there is both more law and less order."²⁰⁵ Private ordering will not solve every conservation concern – not even every fishery problem – but it could well supplement government efforts, if not replace them. Given the plight of marine fisheries, it would be folly to ignore a conservation tool as potentially powerful as private ordering.

201. See *infra* Part II; see also Smith, *supra* note 16. See generally TERRY L. ANDERSON & DONALD R. LEAL, *ENVIRO-CAPITALISTS: DOING GOOD WHILE DOING WELL* (1997).

202. Fred L. Smith, Jr., *Conclusion: Environmental Policy at the Crossroads*, in *ENVIRONMENTAL POLITICS: PUBLIC COSTS, PRIVATE REWARDS* 177, 192 (Michael S. Greve & Fred L. Smith, Jr. eds., 1992).

203. See Demsetz, *supra* note 44, at 1-2.

204. Macey, *supra* note 85, at 1141.

205. ELICKSON, *supra* note 78, at 286.