

STUDENT ARTICLES

ONE FOR ME AND ONE FOR YOU: AN ANALYSIS OF THE INITIAL ALLOCATION OF FISHING QUOTAS

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INTRODUCTION

This paper examines initial allocations of individual fishing quotas (IFQs)² and attempts to describe a framework for explaining past allocations and to provide a template for future allocations. It will not analyze the benefits and drawbacks of tradable individual fishing quotas themselves, a debate which has been extensively examined elsewhere,³ but will instead only examine how initial allocations have occurred and will suggest a few recommendations to make future allocations easier to implement.⁴ The examination of the initial allocations is guided

² This Note uses the term “individual fishing quota” (IFQ) instead of “individual transferable quota” (ITQ) because the former is the term used in U.S. law, 16 U.S.C. § 1853(d). ITQs are, by definition, transferable and IFQs are not necessarily transferable; in the examples in this Note the IFQs are, for the most part, transferable, although some of the examined programs have restrictions limiting transferability.

³ See generally, Alison Rieser, *Property Rights and Ecosystem Management in U.S. Fisheries: Contracting for the Commons?*, 24 *ECOLOGY L.Q.* 813 (1997) (discussing the limitations of the IFQ as a property right); Carrie A. Tipton, *Protecting Tomorrow's Harvest: Developing a National System of Individual Transferable Quotas to Conserve Ocean Resources*, 14 *VA. ENVTL. L.J.* 381 (1995) (comparing the benefits of an Olympic fishing model to the benefits of a working system of ITQs and proposes national implementation of a framework of interworking ITQs); Seth Macinko & Daniel W. Bromley, *Property and Fisheries for the Twenty-First Century: Seeking Coherence from Legal and Economic Doctrine*, 28 *VT.L. REV.* 623 (2004) (arguing that it is not useful to focus solely on property rights to the exclusion of discussion about “management” and “governance”). For an overview of market incentive programs in environmental law, see, e.g., Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law: The Democratic Case for Market Incentives*, 13 *COLUM. J. ENVTL. L.* 171 (1988).

⁴ Initial allocation, in conventional economic theory, should not impact the efficiency of the market created by the IFQ program; hence the initial allocation can be used to pursue “other goals . . . without sacrificing cost-effectiveness.” Tom Tietenberg, *The Tradable Permits Approach to Protecting the Commons: What Have We Learned?*, in *COMM. ON THE HUMAN DIMENSIONS OF GLOBAL CHANGE*, DIV. OF BEHAVIOR AND SOC. SCIENCES AND EDUC., NAT’L RESEARCH COUNCIL, *THE DRAMA OF THE COMMONS* 197, 200 (Elinor Ostrom et al. eds., 2002); see also LEIGH RAYMOND, *PRIVATE RIGHTS IN PUBLIC RESOURCES* 33

by property theory frameworks. An IFQ is one of several types of dedicated access privilege programs, which are output control⁵ management techniques where privileges are granted “to catch a specified portion” of the amount of fish allowed to be caught in a given fishery⁶ per season.⁷ The Note will focus on allocations in IFQs and will discuss other dedicated access privilege programs such as community quotas, cooperatives, and geographically based programs only when they relate to IFQs.⁸

The structure of the analysis is as follows. First, the Note will look at the history of IFQs and examine the importance of the initial allocation in the IFQ process. In a Coasian world, devoid of transaction costs, the initial allocation does not matter. In a political and economic world with transaction costs,⁹ however, allocation decisions are important for the success of implementing the IFQ program and for improving efficiency in post-implementation trades which are impacted by transaction costs. Second, the Note will examine property theories from Elizabeth Rolph, Gary Libecap and Leigh Raymond, which attempt to explain initial allocations of rights in various types of public resources. Third, the Note will review initial allocations in fisheries in the United States and abroad to compare and contrast practices with the theories. Finally, the Note will offer a few recommendations for changing the process and substance of initial allocations of IFQs to improve the chances of further adoption of the programs.

(2003).

⁵ Output controls differ from input controls, which are discussed *infra* at the text accompanying notes 30–34, in that output controls limit fishing results while input controls restrict fishing methods.

⁶ A fishery is defined as “one or more stocks of fish which can be treated as a unit for purposes of conservation and management and which are identified on the basis of geographical, scientific, technical, recreational, and economic characteristics.” 16 U.S.C. § 1802(13) (2000).

⁷ U.S. COMM’N ON OCEAN POLICY, AN OCEAN BLUEPRINT FOR THE 21ST CENTURY FINAL REPORT 245 (2004) [hereinafter USCOP].

⁸ See *id.* at 245–46 (discussing dedicated access privilege programs); see also U.S. GEN. ACCT. OFF., GAO-04-227 INDIVIDUAL FISHING QUOTAS: METHODS FOR COMMUNITY PROTECTION AND NEW ENTRY REQUIRE PERIODIC EVALUATION 24–27 (2004) (describing the implementation and management benefits of the Whiting Conservation Cooperative and the Pollock Conservation Cooperative as compared to IFQs).

⁹ See sources cited *supra* note 4.

I. SHORT HISTORY OF THE RIGHT TO FISH

Government control of fishing rights in legal doctrine is as old as the Roman Empire.¹⁰ Governmental allocation of national property is at least this old as well, with the Roman Republic and Roman Empire both making a practice of dividing conquered lands into farming plots and distributing the plots to soldiers at the end of their military service.¹¹ The re-allocation of state property and benefits to citizens has been contentious throughout history¹² and continues to be so today in areas as diverse as taxi cab medallions¹³, grazing rights¹⁴, and, the focus of this comment, fishing rights.

Control and regulation of fishing rights arises from the scarcity of fish. Many commercial fisheries are experiencing over-exploitation due to a typical 'tragedy of the commons' as described by Garrett Hardin almost a half century ago.¹⁵ Commercial fisheries are overfished in the United States and abroad.¹⁶ The three most recent National Marine Fisheries Service

¹⁰ See COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, NAT'L RESEARCH COUNCIL, SHARING THE FISH: TOWARD A NATIONAL POLICY ON INDIVIDUAL FISHING QUOTAS 40 (1999); Macinko & Bromley, *supra* note 3, at 628–29.

¹¹ See SIDNEY G. BRADY, *The Military Affairs of Ancient Rome, in CAESAR'S GALLIC CAMPAIGN 185* (1947), available at <http://www.pvv.ntnu.no/~madsb/home/war/romanarmy/>.

¹² See GARY D. LIBECAP, CONTRACTING FOR PROPERTY RIGHTS 2–4 (1989).

¹³ See Michael Luo, *To Cabbies, Piece of Tin is a Golden Opportunity*, N.Y. TIMES, April 13, 2004, at A1.

¹⁴ See Michelle M. Campana, *Public Lands Grazing Fee Reform: Welfare Cowboys and Rolex Ranchers Wrangling with the New West*, 10 N.Y.U. ENVTL. L.J. 403 (2002).

¹⁵ Rieser, *supra* note 3, at 814–15 (noting the popular belief that Hardin's tragedy of the commons is the best metaphor for severe depletion of fisheries stocks); Neal D. Black, Note, *Balancing the Advantages of Individual Transferable Quotas against their Redistributive Effects: The Case of Alliance Against IFQs v. Brown*, 9 GEO. INT'L ENVTL. L. & ECON. 727, 730–31 (1997).

¹⁶ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 13; Peter Shelley et al., *The New England Fisheries Crisis: What Have We Learned?*, 9 TUL. ENVTL. L.J. 221, 222–24 (1996); FISHERIES DEP'T, FOOD AND AGRIC. ORG. OF THE UNITED NATIONS, STATE OF THE WORLD FISHERIES AND AQUACULTURE 23 (2002) [hereinafter FAO 2002 STATUS REPORT], available at <http://www.nmfs.noaa.gov/sfa/Status%20of%20Fisheries%202000.pdf>; see also USCOP, *supra* note 7, at 11 ("Experts estimate that 25 to 30 percent of the world's major fish stocks are overexploited."); MARINE FISH CONSERVATION NETWORK, BODY OF EVIDENCE: THE FRAGILE STATE OF AMERICA'S OCEANS—A REVIEW OF RECENT SCIENCE AND A FRAMEWORK FOR RECOVERY 1–3 (2004) ("Overfishing has dramatically reduced fish populations.") available at http://www.conservefish.org/site/pubs/network_reports/bodyofevidence.pdf.

Reports to Congress have reported that an average of 23 percent of major U.S. fisheries are subject to overfishing¹⁷ and that 30 percent of major U.S. fisheries are overfished.¹⁸ Some fisheries have closed due to overfishing.¹⁹

In response to declining fisheries, governments around the world have responded with a variety of measures, from banning foreign vessels²⁰ to restricting the length of the fishing season,²¹ the number of participants,²² and the type of gear on boats²³ that can be used. A fundamental aspect of many of these fishery protection programs²⁴ is limiting the total allowable catch (TAC)

¹⁷ “The terms ‘overfishing’ and ‘overfished’ mean a rate or level of fishing mortality that jeopardizes the capacity of a fishery to produce the maximum sustainable yield on a continuing basis.” 16 U.S.C. § 1802(29) (2000); *see also* COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 22, fig. 1.1.

¹⁸ 2000 NAT’L MARINE FISHERIES SERV., REP. TO CONGRESS: STATUS OF THE FISHERIES OF THE UNITED STATES 16 tbl.2, *available at* <http://www.nmfs.noaa.gov/sfa/Status%20of%20Fisheries%202000.pdf>; 2001 NAT’L MARINE FISHERIES SERV., TOWARD REBUILDING AMERICA’S MARINE FISHERIES: ANN. REP. TO CONGRESS ON THE STATUS OF U.S. FISHERIES 14 tbl.2, *available at* http://www.nmfs.noaa.gov/sfa/reg_sycs/statusostocks/Status02.pdf; 2002, NOAA FISHERIES, SUSTAINING AND REBUILDING: REP. TO CONGRESS, THE STATUS OF THE U.S. FISHERIES 20 tbl.2, *available at* http://www.nmfs.noaa.gov/sfa/statusoffisheries/cover_sos.pdf. For the purpose of these reports, stock is subject to “overfishing” if the harvest rate is above a prescribed threshold as established within a FMP, and a stock is “overfished” if the stock size is below a prescribed biological threshold. NAT’L MARINE FISHERIES SERV., TOWARD REBUILDING, *supra*, at 2.

¹⁹ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 38 (stating that Atlantic halibut stocks can no longer support commercial fishing); Andrew Fagenholz, Comment, *A Fish in Water: Sustainable Canadian Atlantic Fisheries Management and International Law*, 25 U. PA. J. INT’L ECON. L. 639, 639 (2004) (“Canada has declared full moratoria on fishing in the once renowned northwest Atlantic cod fishery.”); LIBECAP, *supra* note 12 at 76–77 (1989) (commercial sardine fishery peaked at 500,000 tons per year in the 1930s and collapsed to almost nothing by 1952).

²⁰ *See* 16 U.S.C. § 1821 (2000). The United States and many other nations have claimed 200 mile “Exclusive Economic Zones,” (EEZs). Third Conference on the Law of the Sea authorized the exercise of sovereign rights over offshore fisheries resources for 200 mile EEZs, but the U.S. has not ratified the treaty, although its claims to a 200 mile EEZ pre-date the Law of the Sea treaty. *See*, THOMAS J. SCHOENBAUM, ADMIRALTY AND MARITIME LAW § 2-16 (4th ed. 2004).

²¹ 16 U.S.C. § 1853(b)(2) (2000).

²² 16 U.S.C. § 1853(b)(1), (b)(6) (2000).

²³ 16 U.S.C. § 1853(b)(4) (2000).

²⁴ For a global review of fisheries programs, *see generally* CASE STUDIES ON THE ALLOCATION OF TRANSFERABLE QUOTA RIGHTS IN FISHERIES (FAO Fisheries Technical Paper No. 411, R. Shotton ed., 2001) [hereinafter FAO CASE STUDIES]

of the target fish per year.²⁵ Each coastal nation determines the TAC based (at least in theory) on scientific evidence with the goal of restoring the fishery population so that it can be harvested at a “maximum sustainable yield” (MSY).²⁶

In the United States, the Magnuson-Stevens Fishery Conservation and Management Act of 1976²⁷ (Magnuson-Stevens Act) authorizes regional fishery management councils, with the advice and consent of the Secretary of the Department of Commerce,²⁸ to create fishery management plans (FMPs).²⁹ These management plans can utilize many types of input (or effort) restrictions, such as restrictions on gear, access, season length, and locations.³⁰ For many fisheries, the results of these restrictions were less than optimal and frequently resulted in drastically abbreviated fishing seasons (“derbies”) with a myriad of problems, such as over-capitalization of the fleet,³¹ high rates of bycatch,³² highgrading,³³ ghost fishing,³⁴ and unsafe fishing practices which resulted in loss of boats and lives. Moreover, the annual catches still frequently exceeded the TAC.³⁵ The restrictions created a “balloon effect”—if you squeeze one area of a balloon, another area increases in size; similarly, restrictions on one aspect of

(evaluating allocation of fishing rights in twenty-three different fisheries around the world), available at <ftp://ftp.fao.org/docrep/fao/004/y2684e/y2684e00.pdf>.

²⁵ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 1.

²⁶ SCHOENBAUM, *supra* note 20; See Fishery Conservation and Management Act of 1976 (as amended), 16 U.S.C. § 1853(a)(1)(A), (a)(3), (a)(4)(A)–(C) (2004); COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10 at 274, (MSY is the “[l]argest average catch that can be harvested on a sustainable basis from a stock under existing environmental conditions”).

²⁷ 16 U.S.C. §§ 1801–1883 (2004).

²⁸ See 16 U.S.C. § 1852 (2004).

²⁹ See 16 U.S.C. § 1853 (2004).

³⁰ See 16 U.S.C. § 1853(b) (2004); COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 115–19.

³¹ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 33, 115–19.

³² “Bycatch” is fish of one species caught during fishing targeting another species. *Id.* at 268.

³³ Where restrictions are denominated quantitatively instead of by weight, there is an incentive to discard underweight catch and only retain high-weight catch; this practice is called “highgrading.” *Id.* at 36.

³⁴ “Ghost fishing” is what occurs when fish are ensnared and killed by discarded (either accidentally or intentionally) gear, usually discarded as a result of frenetic fishing derbies. *Id.* at 35, 272.

³⁵ *Id.* at 35.

fishing resulted in increased fishing effort in other aspects of fishing.³⁶ One extreme result of these restrictions was a two to three day fishing season in the Alaskan Halibut fishery during which the entire TAC for the year was caught.³⁷

In response to the mounting problems of fisheries management, the United States and other nations implemented IFQs³⁸ to allocate the right to fish³⁹ and to eliminate the need to “race to fish”⁴⁰ for some⁴¹ of the commercial fisheries. With a guaranteed right to catch a certain amount of fish, a fisher has no need to rush to catch the fish before the TAC is reached and the fishery is closed. The distribution of these rights to fish for a portion of the TAC has been the most important hurdle to further implementation of the IFQ-based fishery management plans.⁴²

II. IMPORTANCE OF THE INITIAL ALLOCATION

Classic Coasian economic analysis holds that an efficient allocation of resources results from secure tradable property rights regardless of the initial allocation. Thus, in theory the creation of the tradable IFQ program in and of itself is all that is required to

³⁶ Tipton, *supra* note 3, at 390–91 (“[T]he inefficiencies are moved from one axis to another, the fleets still cannot remain financially viable, and preservation of the resource becomes increasingly harder to achieve.”); see U.S. GENERAL ACCOUNTING OFFICE, GAO-03-159 INDIVIDUAL FISHING QUOTAS: BETTER INFORMATION COULD IMPROVE PROGRAM MANAGEMENT 1, 1 (2002) (describing restrictions which failed to reduce catch and overinvestment); cf. USCOP, *supra* note 7, at 244 (describing the “race for the fish” resulting from input restrictions).

³⁷ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 306–07.

³⁸ *Id.* at 20–21 (defining IFQs as “limited access permits to harvest quantities of fish” under the Magnuson-Stevens Act). If the quota can be traded, sometimes it is referred to as an “ITQ”; if the quota is legally attached to a vessel, it may be referred to as an “IVQ”. For the purposes of this Note, “IFQ” will be used to refer to any right to fish a defined amount of fish.

³⁹ See, e.g., Alison Rieser, *Prescriptions for the Commons: Environmental Scholarship and the Fishing Quotas Debate*, 23 HARV. ENVTL. L.REV. 393, 407 (1999); COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10; FAO CASE STUDIES, *supra* note 24.

⁴⁰ Rieser, *supra* note 39, at 407.

⁴¹ There are only five IFQ programs in U.S. federal fisheries managed under the Magnuson-Stevens Act, and only 75 total fishery management plans. Nat’l Marine Fisheries Serv., *Sustaining and Rebuilding*, NOAA Fisheries 2002 Report to Congress, the Status of the U.S. Fisheries v (April 2003). There are over 900 U.S. federal fisheries. *Id.* at ii. See also FAO CASE STUDIES, *supra* note 24 (describing non-U.S. IFQ programs).

⁴² See COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 27, 31, 142–43.

achieve an increase in efficiency.⁴³ But initial allocation decisions are critical—and contentious—because of the opposition to the redistribution of wealth created by the IFQs.⁴⁴ IFQs can create windfalls for some quota recipients while reducing income opportunities for other fishery participants. The allocation of private rights to public resources (in both the United States and in other nations) frequently creates political debate which may make the allocation difficult or prevent it from happening at all.⁴⁵ Without agreement on the initial allocations, IFQs will not be implemented due to political opposition to this redistribution.⁴⁶ Interests outside of the immediate community of fishing boat owners also resist implementation of IFQs because of opposition to the initial allocation on “fairness” or other grounds.⁴⁷

⁴³ See Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960); Carol M. Rose, *Expanding The Choices For The Global Commons: Comparing Newfangled Tradable Allowance Schemes To Old-Fashioned Common Property Regimes*, 10 DUKE ENVTL. L. & POL’Y F. 45, 59 (1999).

⁴⁴ LIBECAP, *supra* note 12, at 3–5 (1989) (“The political process of defining and enforcing property rights can be divisive because of the distributional implications of different property allocations.”).

⁴⁵ See generally, RAYMOND, *supra* note 4, at 197–98 (analyzing the allocation of rights under the Taylor Grazing Act and the Clean Air Act of 1990, and the attempted international allocation of Green House Gas emissions rights); see *infra* Part 4 (discussing IFQ allocations in the U.S. and in other nations); see also JULIO PEÑA-TORRES, *INDIVIDUAL TRANSFERABLE FISHING QUOTAS IN CHILE: RECENT HISTORY AND CURRENT DEBATES* 4 (Ilades-Georgetown University, Working Paper No. inv139, 2002) (“Grandfathering” is considered a requirement for the political viability of the new IFQ program in Chile), available at http://www.ilades.cl/economia/Publicaciones/ser_inv/inv139.pdf.

⁴⁶ Surveys of fishers prior to and after the IFQ allocation show strong correlation between negative attitudes towards the IFQ program and either expected minimal allocation or actually receiving small or no allocation. Gunnar Knapp, *Alaska Halibut Captain’s Attitudes Towards IFQs*, 11 MARINE RESOURCE ECON. 43, 52 (1996); Gunnar Knapp, *Initial Effects of the Alaska Halibut IFQ Program: Survey Comments of Alaska Fisherman*, 12 MARINE RESOURCE ECON. 239, 245 (1997). Such concerns contributed to Congress’s decision to impose a moratorium on the creation of new IFQ regimes from 1996 to 2002, during which a study was commissioned to examine IFQs in depth. 16 U.S.C. § 1853(d)(1)(A); see COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at ix, 243. See e.g., Scott C. Matulich et al., *Toward a More Complete Model of Individual Transferable Fishing Quotas: Implications of Incorporating the Processing Sector*, 31 J. ENVTL. ECON. & MGMT. 112, 112–13 (1996).

⁴⁷ See SETH MACINKO & DANIEL W. BROMLEY, *WHO OWNS AMERICA’S FISHERIES?* (2002) (arguing that *public ownership* of the seas requires limiting IFQs to auctions of limited-duration quota privileges only); COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 96 (describing opposition by crew members and processors to initial allocation decisions).

The optimistic view of this situation is that efficiency will occur “regardless of how the permits are allocated initially” and that “the resource manager can use the initial allocation to solve other goals. . . without sacrificing cost-effectiveness.”⁴⁸ In theory, the political pressures for particular allocations can be accommodated without sacrificing the efficient operation of the market after the allocation is implemented. The political process can, and should, accommodate political and social norms in order that the allocation benefits the public interest, as defined by these norms. The political process plays an important role because

[E]ffective environmental procedures may not take full cognizance of other social values such as justice or equity. If all the fish are owned by the rich, a property rights-based allocation system may be efficient, but it will not be just. Optimal environmental governance must therefore be understood to be both relative and contextual.⁴⁹

In addition to being important for political reasons, the initial allocation is also important to further the efficiency goal of the IFQ program.⁵⁰ The trading of IFQs is hindered by transaction costs; this makes the initial allocation important for the purposes of achieving efficient use of the fishery within the sustainable catch limits.⁵¹ Costs associated with trading IFQs include both the legal obstacles created by the IFQ program and the more common transaction costs associated with searches for buyers and sellers and access to price information.

The IFQ program itself may create transaction costs due to legal restrictions on trading and regulatory monitoring. Some quota rights may not be transferable, such as those given to communities.⁵² “Owner-operator” rules requiring quota holders to

⁴⁸ Tietenberg, *supra* note 4, at 200.

⁴⁹ Daniel C. Esty, *Toward Optimal Environmental Governance*, 74 N.Y.U. L. REV. 1495, 1572 (1999). See generally DANIEL A. FARBER & PHILIP P. FRICKEY, *LAW AND PUBLIC CHOICE: A CRITICAL INTRODUCTION* 33–37 (1991) (describing the normative implications of public choice theory).

⁵⁰ See 16 U.S.C. § 1851(a)(5) (“Conservation and management measures shall, where practicable consider efficiency in the utilization of fishery resources. . .”).

⁵¹ Tietenberg, *supra* note 4, at 200–01.

⁵² See COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 124–28 (describing community development quotas as “assignments of quota shares to individual communities for the purpose of enhancing fishery-based economic activity”).

be present on the fishing boat,⁵³ licensing requirements restricting which boats may utilize quotas,⁵⁴ and restrictions on the minimum size of quota trades and maximum size of quota holdings⁵⁵ all restrict trades and create the potential for economically inefficient fishing. Also, registration and government monitoring of trading of IFQs creates additional costs.⁵⁶

The efficient allocation of quota rights through trading will be further encumbered by the more mundane natural transaction costs associated with buying and selling. For fisheries with few participants, the market for the quota may provide little visibility to buyers, sellers and prices, resulting in few trades occurring.⁵⁷ Other IFQ fisheries, with more participants and more rights to trade (and more valuable rights), have more liquid and visible markets.⁵⁸

III. PROPERTY THEORIES AND THE INITIAL ALLOCATION OF PROPERTY

Attempting to explain how one group of fishers attains dominance over others in a particular situation would be fact- and context-specific and beyond the scope of this Note. Instead, this Note will look to property theory to explain both how one type of allocation came to be the preferred method for IFQs and the choices made in implementing that method. The process of “grandfathering” has emerged as the preferred method of initial allocation, rising above other distribution methods such as auctions. “Grandfathering refers to an approach that bases the

⁵³ See, e.g., *id.* at 73 (describing the IFQ program for halibut and sablefish in the North Pacific which requires IFQ owners to be on board the vessel when the IFQ is being fished).

⁵⁴ For a description of an archetypal licensing scheme, see A. Hatcher & A. Read, *The Allocation of Fishing Rights in UK Fisheries*, in *FAO CASE STUDIES*, *supra* note 24, at 4.

⁵⁵ E.g., COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 73–74 (describing rules on the accumulation and transfer of quota shares in the IFQ program for halibut and sablefish in the North Pacific).

⁵⁶ See *id.* at 381, 390.

⁵⁷ See *id.* at 368. There is a “chicken or the egg” question in determining whether lack of visibility impedes trades or lack of trades reduces market visibility.

⁵⁸ *Id.* See also RICHARD G. NEWELL ET AL., *FISHING QUOTA MARKETS* 33–35 (Resources for the Future, Discussion Paper No. 02-02, 2002) (concluding that there are liquid efficient markets for quota trading in New Zealand’s fisheries), available at <http://www.rff.org/rff/Documents/RFF-DP-02-20.pdf>.

initial allocation on historic use. Under grandfathering, existing sources have only to purchase any additional permits they may need over and above the initial allocation.”⁵⁹ The difficulty for policy makers creating IFQ programs and for academics advocating for (or against) IFQs is: what are the important factors in the negotiations that lead to the granting of the initial allocation quota in a particular manner, such as grandfathering? Property theory offers some assistance in answering this question as quotas, to a certain degree, resemble more traditional property.⁶⁰ Gary Libecap, Leigh Raymond and Elizabeth Rolph have analyzed initial allocations of quotas or licensed property rights⁶¹ for various public resources, analyses guided by property theory frameworks.⁶²

The theories proffered by these three scholars are complimentary.⁶³ Rolph, writing in 1983, argues that the implementation of rights allocations of public resources has the effect of supporting the economic status quo.⁶⁴ Libecap’s 1989 treatise reiterates Rolph’s point that maintaining at least the status quo is required for creation of a new rights allocation regime and he adds to this theory by identifying the impediments and incentives to creating a new regime with new allocations of rights.⁶⁵ Raymond’s theory, espoused in his 2003 book, elaborates on the factors Libecap listed as influential in a rights allocation decision: background norms and precedent.⁶⁶ By combining these three theories, a more complete, albeit more complicated and variable, theory emerges, which may be able to explain past allocations and guide future allocations.

⁵⁹ Tietenberg, *supra* note 4, at 208. For an explanation of the dominance of grandfathering in allocation of rights for resources with prior beneficial use, *see id.*

⁶⁰ IFQs are sometimes referred to as “quasi-property” or “licensed property.” RAYMOND, *supra* note 4, at 3–4, 14, 195 (2003).

⁶¹ However, “there is little empirical work on any sort on the process of distributing licensed property rights under market-based policies.” *Id.* at 30.

⁶² *See infra* Parts 3.B–D.

⁶³ Despite analyzing the same field, the authors never cite each other.

⁶⁴ *See* Elizabeth S. Rolph, *Government Allocation of Property Rights: Who Gets What?*, 3 POL’Y ANALYSIS & MGMT. 45 (1983); *see also infra* Part 3.B.

⁶⁵ *See* LBECAP, *supra* note 12; *see also infra* Part 3.C.

⁶⁶ *See* RAYMOND, *supra* note 4; *see also infra* Part 3.D.

A. *Background Norms: Right of First Possession and the Public Trust Doctrine*

Before delving into the three property theories, a brief discussion of the popular conceptions of property related to the seas is appropriate. These popular norms provide the background against which the property theories operate. Historically, the right of first possession governed the allocation of fish and there was no allocation of rights to the open oceans.

The doctrine of first possession is a dominant theme in the United States.⁶⁷ Under a classic illustration of this doctrine, a hunter only has the right to possess a wild animal after she has clearly captured, killed, or mortally wounded it.⁶⁸ Two fisheries-related derivatives of the doctrine of first possession are the rules of 'fast-fish loose-fish' and 'iron-holds-the-whale,' both of which explicitly hold that no fisher or whaler has any claim to any fish or whale prior to actually killing, catching or spearing the creature.⁶⁹

Another important popular norm is the public trust doctrine,⁷⁰ under which the sea and the creatures in it are generally considered common property of all and specific property of none.⁷¹ The prominent property theory scholar Carol Rose has described the doctrine as holding that "some resources, particularly lands beneath navigable waters or washed by the tides, are either inherently the property of the public at large, or are at least subject to a kind of inherent easement for certain public purposes. Those purposes are foremost navigation and travel, to a lesser extent

⁶⁷ First Possession is also important in other nations, but a full comparative survey is beyond the scope of this Note.

⁶⁸ Carol Rose, *Possession as the Origin of Property*, 52 U. CHI. L. REV. 73, 87-88 (1985) ("The doctrine of first possession . . . gives the earth and its creatures over to those who mark them so clearly as to transform them."). "Possession thus means a clear act," Rose, *supra*, at 76 (discussing rule of possession and the social norms behind the rule as enunciated in *Pierson v. Post*, 3 Cai. R. 175 (N.Y. Sup. Ct. 1805)).

⁶⁹ Dean Lueck, *The Rule of First Possession and the Design of Law*, 38 J.L. & ECON. 393, 425 (1995); Macinko & Bromley, *supra* note 3, at 636-37.

⁷⁰ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 39; see also Tietenberg, *supra* note 4, at 205. Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. CHI. L. REV. 711, 717-18 (1986) (describing property that is susceptible to falling under the public trust doctrine).

⁷¹ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 27.

fishing.”⁷² The belief that the sea and its creatures belong to the nation, not individuals, was first codified in the West in the Roman Empire’s Codex Justinus fifteen hundred years ago.⁷³ Anglo-Saxon common law reiterated this background norm in the Magna Carta in 1215, which abolished fishing weirs, thereby banning private control of fishing areas,⁷⁴ and allocated such “communal properties” to the ownership of the government, not individuals.⁷⁵ The idea of common ownership and public trust in the United States was given support by the plentiful bounty to which settlers were given open access in the early American frontier.⁷⁶ The idea that the oceans are a trust open to all may have been reinforced by the centuries of practice under which no government controlled the oceans whatsoever; government control of the exclusive economic zones (EEZs) extending 200 miles from coast is a relatively recent phenomenon.⁷⁷ Many people have taken the idea of public trust doctrine and applied it to fisheries management in the EEZs⁷⁸ and this is the basis for some of the resistance to the free allocation of quota in current U.S. IFQ programs.⁷⁹ Whether the Public Trust Doctrine applies to the U.S.

⁷² Carol Rose, *Joseph Sax and the Idea of the Public Trust*, 25 *ECOLOGY L.Q.* 351, 351 (1998) (citations omitted). Rose uses this definition to describe the doctrine prior to Joseph Sax’s revival and expansion of it. *Id.*

⁷³ Mark Dowie, *Salmon and the Caesar, Will a Doctrine from the Roman Empire Sink Ocean Aquaculture?*, *LEGAL AFFAIRS*, Sept.–Oct. 2004, at 14.

⁷⁴ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 27.

⁷⁵ Carol Rose, *Romans, Roads, and Romantic Creators: Traditions of Public Property in the Information Age*, 66 *LAW & CONTEMP. PROBS.* 89, 93–94 (2003) (citing to Blackstone’s admonition to avoid quarrels the best course of action is “vesting the things themselves in the sovereign of the state”) (citations omitted). In some forms of the public trust doctrine, the government’s role is to preserve the public property and public access to it, but not to organize or manage it. Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 33 *U. CHI. L. REV.* 711, 720–21 (1986) (“Implicit in these older doctrines is the notion that, even if a property should be open to the public, it does not follow that public rights should necessarily vest in an active governmental manager.”).

⁷⁶ LIBECAP, *supra* note 12, at 79.

⁷⁷ The 200-mile zone was first created in 1976. Magnuson Fishery Conservation Act of 1976, Pub. L. No. 94-265 § 101, 90 Stat. 331, 336 (1976) (enacted as amended at 16 U.S.C. § 1811 (2000)); *see* sources cited *supra* note 20.

⁷⁸ *See* COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 44; *see also* Rose, *supra* note 72, at 355.

⁷⁹ MACINKO & BROMLEY, *supra* note 47.

EEZ is an open question,⁸⁰ but some strands of the Doctrine are implicit in the purpose of the Magnuson-Stevens Act itself, which is to maximize the “optimum [fishing] yield” for all potential fishers in the fishing industry while allowing individual fishers, at most, to receive only “privileges” within limitations.⁸¹

B. *Elizabeth Rolph—Maintain the Status Quo*

Elizabeth Rolph provides a framework based on maintenance of the status quo for government grants of benefits and rights.⁸² According to Rolph, the initial allocation typically does not disturb the existing allocation of resources and wealth; the allocations merely replicate the pre-existing distribution of wealth.⁸³ To demonstrate this point, Rolph divides instances of government allocation of property into three types. The first typology describes programs to develop unused public resources which can be auctioned or sold with little public resistance because there is no prior status quo.⁸⁴ The focus for allocating this type of resource is on appropriate rents, thereby maintaining the status quo economically.⁸⁵ By auctioning unused resources, no firm or individual receives a windfall because the resource auctioned is priced at the market value of the resource, as determined by the bidding process. This maintains the status quo because the resource’s auction price will be the same risk-adjusted price as any other investment, given open information and liquid markets.⁸⁶

The second typology consists of programs that control externality costs for resources which have two characteristics: they are (1) quasi-public or communal resources and (2) are used in a private way with substantial private investment.⁸⁷ The goal of government in this type of property allocation is to reduce externality costs and “distribute the costs of that reduction among

⁸⁰ See generally Dowie, *supra* note 73 (discussing the Public Trust Doctrine in relation to proposed aquaculture in the EEZ).

⁸¹ 16 U.S.C. § 1851 (a)(1), (a)(4) (2004).

⁸² See Rolph, *supra* note 64.

⁸³ *Id.* at 59.

⁸⁴ *Id.* at 48, 51. Rolph lists television broadcast frequencies and off-shore oil leases as examples in this category. *Id.* at 49.

⁸⁵ *Id.* at 50–51.

⁸⁶ No rational investor will pay more, or allow another to pay less, than the risk-adjusted net present value of the stream of income expected from the resource.

⁸⁷ Rolph, *supra* note 64 at 51.

the users in a way that maintains their existing economic relationships or the economic *status quo*.⁸⁸ Accordingly, for these allocations, the government does not exact rent prices, and usually grants rights in perpetuity.⁸⁹

The third typology describes government programs that moderate the impact of changing market conditions. This third type is subdivided into producer protection programs, consumer protection programs, and intra-industry protection.⁹⁰ These government allocations are justified by the principle that the rights allocations are provided on the basis of maintaining the status quo when changing market dynamics would otherwise shift the economic benefits from one group to another.⁹¹ The free allocation of rights is apparently done almost entirely on the basis of historical usage for programs in this category, and new entrants are required to buy the rights to participate in the market from existing participants.⁹² These rights are issued for the duration of the applicable program, an extended period of time, because repeatedly determining eligibility and allocation would “add enormously to the costs and controversies associated with the programs.”⁹³ While the allocation method is the same as the second typology, the goals and purposes are different—allocation decisions under the second typology seek to reduce externality costs, whereas those under the third typology seek to moderate changing economic conditions.

Rolph draws three other observations, relevant to IFQs, about all the programs she examined. First, Rolph identifies a concern for “small business” as an important aspect of rights allocation programs.⁹⁴ Second, Rolph makes the observation that rights allocation programs are tempting and frequent targets for redistribution of wealth policies, a benefit provision to constituents.⁹⁵ Third, she makes the counter-observation that

⁸⁸ *Id.* at 52. Rolph’s examples in this category are air pollution rights, groundwater pumping rights, and allocations of radio broadcast frequencies in the 1930s. *Id.* at 49, 52.

⁸⁹ *Id.* at 52–53.

⁹⁰ *Id.* at 53–56.

⁹¹ *Id.* Examples include allocations of natural gas and petroleum to historical users during periods of limited supply and federally maintained price controls.

⁹² *See id.* at 54.

⁹³ *Id.*

⁹⁴ *Id.* at 57.

⁹⁵ *See id.* at 57.

“we are unlikely to see efficient programs adopted unless they do *not* affect the distribution of wealth.”⁹⁶ These two contrary observations have parallels in the two other theories discussed below.

Despite the seductive simplicity of the “status quo” theory and method for allocating rights, it does not appear to be sufficient on its own as a framework to explain, or to assist policy makers in developing, IFQ programs. “Status quo” is a malleable concept, and depends on selecting both a temporal baseline and an economic position in the production stream. Is the status quo the year before the IFQ is introduced? A period of years? The period *before* the introduction of the first FMP under the Magnuson-Stevens Act? Is the relevant status quo the status quo for the communities, the crew, the captains, the consumers, the processors, indigenous peoples, the fish, or the entire biologic community? Thus, while the “status quo” theory assists in defining the scope of the questions and problems policy makers should address, it creates the further problem of defining “what is the status quo?”—a question only answerable by reference to other values or other frameworks.

C. Gary Libecap—*Status Quo and More*

Gary Libecap expands on the basic “maintain and replicate status quo” concept discussed by Rolph while proposing a framework to explain why property regimes have changed, or have failed to change, in response to changing market conditions that create an opportunity for greater wealth maximization via a new property regime.⁹⁷ Libecap argues that the possibility for a Pareto improvement⁹⁸ is required to convince participants to negotiate and accept a new allocation of rights and a new rights regime.⁹⁹ Libecap explains that the ability to negotiate for the Pareto improvement is limited by five specific factors he identifies and by

⁹⁶ *Id.* at 59 (emphasis added).

⁹⁷ LIBECAP, *supra* note 12.

⁹⁸ A Pareto improvement, named for Italian economist Vilfredo Pareto is “a change in resource allocation that makes at least one person better off while not reducing the well-being of anyone else. In this, sense, a policy seeking efficiency via Pareto improvement might be more informally described as pursuing a win-win solution, making it difficult for anyone to oppose.” RAYMOND, *supra* note 4 at 35.

⁹⁹ *Id.* at 11 (“[P]arties must see their welfare improved or at least made no worse off in order for them to support institutional change.”).

cultural and legal background norms relevant to the particular rights allocation in question.¹⁰⁰

Libecap's theory supplements Rolph's in the following ways. First, it hypothesizes that a change in rights allocation will only occur when aggregate gains are possible from the new allocation.¹⁰¹ Due to resource losses under an existing (old) property regime, market participants have an incentive to change the property regime to increase gains by reducing the "common pool losses."¹⁰² The incentive to change is countered by entrenched interests that may lose resources in the new regime.¹⁰³ Second, the theory helps define the key stumbling blocks to negotiating a new regime. Success in changing the property rights regime, and implicitly the initial allocation of the distribution of the new rights, depends upon five factors: (1) the size of the aggregate gains expected from the change, (2) the number of the bargaining parties, (3) the heterogeneity of the groups negotiating for the new rights, (4) the information problems facing the group, and (5) "the skewness or concentration of the current and proposed share distribution."¹⁰⁴

Third, Libecap introduces into the debate the role of pre-existing "norms" exogenous to these five factors and the particular rights allocation in question. The allocation debate is impacted by "broader, longer-term environmental factors that reflect the legacy of past political agreements regarding property rights. These environmental factors . . . include legal precedents, distributional norms, and individual expectations regarding the use of the political process to assign property rights."¹⁰⁵

To the extent that Libecap's theory requires the allocation of rights under an IFQ scheme to accord with pre-existing dominant social norms, IFQ programs will always face difficult opposition in the United States. IFQ programs attempt to take away the right *to fish* from both the general public and from some fishers previously involved in the fishery while simultaneously granting rights to *the fish*.¹⁰⁶ These two essential aspects of IFQs run counter to the two

¹⁰⁰ *Id.* at 10, 18, 21.

¹⁰¹ *Id.* at 19.

¹⁰² *Id.* at 12.

¹⁰³ *Id.* at 11–12.

¹⁰⁴ *Id.* at 21.

¹⁰⁵ *Id.* at 18.

¹⁰⁶ While technically no one has a legal right to fish or to the fish within U.S.

dominant background norms, discussed above in section 3.A. “These two legal traditions have contributed to a general prohibition of private property rights to most fish stocks.”¹⁰⁷ A restriction on the right *to fish* is contrary to “a long-standing legal protection of low-cost access to fisheries by all citizens.”¹⁰⁸ While some restrictions on the right to fish already exist in a few of America’s fisheries,¹⁰⁹ this is a relatively recent development in most fisheries as the United States did not claim sovereignty over its EEZ until the 1970s.¹¹⁰ Granting rights *to the fish*, while they are in the water, runs counter to the doctrine of first possession.¹¹¹ Therefore, other social norms must be found to support IFQs, since IFQs, while gaining in acceptance, still occur infrequently and sporadically and are not yet approaching the level of a widely accepted norm.¹¹² Other values relied upon in IFQ programs are prior success, capital investment,¹¹³ and community impact, as well as conservation, resource preservation, and long-term planning.¹¹⁴ Whether these values are as dominant as the doctrines of first possession and the right to open fisheries is an open question.

D. Leigh Raymond’s “Dialectic” Property Theory Framework

Leigh Raymond proposes a framework for understanding and predicting initial allocations of property rights based on the

territorial waters as all fishing beyond three nautical miles from the coast is done via permission of the Fisheries Management Councils, *see* 16 U.S.C. § 1853(b), (d)(3), the word “rights” is used here to convey the popular meaning, not the strict legal meaning, in order to discuss background cultural norms.

¹⁰⁷ LIBECAP, *supra* note 12 at 19; *see* discussion *supra* Part 3.A.

¹⁰⁸ LIBECAP, *supra* note 12 at 19; *see also* COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 32 (“[I]n the United States, any interest in individual quotas was probably stymied by widespread resistance to limited entry.”); *see e.g.*, ALASKA CONST. art. VIII, §§ 3, 15.

¹⁰⁹ *See, e.g.*, COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 32 (“[T]he only case of limited entry in federal waters into the early 1980s was the surf clam fishery.”). *See* Katrina Miriam Wyman, *From Fur to Fish: Reconsidering the Evolution of Private Property*, 80 N.Y.U. L. REV. 117, 154–55, (2005).

¹¹⁰ *See* SCHOENBAUM, *supra* note 20.

¹¹¹ *See supra* notes 68–69 and accompanying text.

¹¹² *See* Tietenberg, *supra* note 4, at 216.

¹¹³ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 151 (“[T]he short history of IFQs . . . seems to reflect a bias toward capital ownership.”).

¹¹⁴ 16 U.S.C. § 1851(a) (2004).

pre-existing norms society holds about property rights.¹¹⁵ He describes these pre-existing norms by referencing the classical works of John Locke, David Hume, P.J. Proudhon, and Morris Cohen, who present four different views of the nature of property.¹¹⁶ Raymond proposes a Hegelian framework that combines Locke's intrinsic, pre-political, secure view of property with the instrumentalist, political, insecure theory of property from Cohen.¹¹⁷ Alternatively, Raymond also proposes a second framework based on the works of Immanuel Kant and John Martin Gillroy which combines and balances Hume's political, secure, and possessory view of property and Proudhon's pre-political, insecure, and egalitarian view of property.¹¹⁸

The Hegelian and Kant/Gillroy frameworks provide an explanation for the coexistence of multiple, apparently contradictory, social norms, such as a belief in both property as a pre-political right derived from effort *and* property as a tool for redistribution of wealth by the government. The ability to integrate these contradictory positions reconciles the observations of Rolph that rights allocation schemes must both maintain the status quo and are also frequently used by politicians to redistribute wealth.¹¹⁹ Raymond provides a framework for integrating other competing norms, such as the competing views of property that he discusses, or specific norms, such as "fast-fish loose-fish," identified by Libecap. While Libecap posits that background norms are important, Raymond's theory reconciles background norms by integrating conflicting theories to form a new theory of social norms.

Raymond analyzes initial distributions of individual tradable quotas in three historical schemes and applies the Hegelian and Kant/Gillroy theories to explain and describe the process for the initial allocation of benefits and rights in each scheme.¹²⁰

¹¹⁵ RAYMOND, *supra* note 4.

¹¹⁶ *Id.* at 41.

¹¹⁷ *Id.* at 41, 56–59.

¹¹⁸ *Id.* at 41, 63–65.

¹¹⁹ See *supra* notes 95–96 and accompanying text.

¹²⁰ Specifically, Raymond looks at grazing rights in the American West under the Taylor Grazing Act, sulfur dioxide emissions trading under the Clean Air Act amendments of 1990, and carbon monoxide emissions trading proposed under the Kyoto Protocol. RAYMOND, *supra* note 4. Raymond describes ITQs as "quasi-property" with some of the characteristics of traditional property. *Id.* at 3–4, 14.

Raymond's conclusions from these analyses are important in the IFQ context. Any allocation under either the Hegelian or the Kant/Gillroy theories must be consistent with "certain dominant norms" and are limited by "existing norms in that sociopolitical setting."¹²¹ Raymond describes the influence of instrumental goals in these normative social beliefs and concludes that the grandfathering allocation process (a method reflecting the values in prior beneficial use) is less influential than commonly believed.¹²² While prior beneficial use was usually the starting point of the discussion of the allocation of rights in the three examples he examines, participants could steer the allocation away from this principle (to varying degrees) towards other allocations also deemed "equitable" and "fair."¹²³ The degree and nature of the prior use seemed to be the most important indicator of how dominant the "grandfathering" aspect of the allocation was; the more "beneficial" and lengthy the prior use, the more dominant "grandfathering" was in the allocation.¹²⁴

IV. ALLOCATION EXAMPLES

Over the last twenty-five years, several nations have implemented IFQ programs, with variations among the programs in the degree of freedom to trade the quota. An examination of some of these programs may provide support for some or all of the three property theories discussed in this Note and the theories' relevance to the initial allocation of IFQs.

A. *United Kingdom*

The United Kingdom manages its numerous fisheries under a dual licensing system of vessel licenses and quota allocations.¹²⁵ First, each fishing boat must have a license particular to a type of fish in a given geographic area. The license must also be specific to the vessel and its capacity, a formula based on boat size and engine power. Vessel licenses were granted to prior users (defined

¹²¹ *Id.* at 8–9, 195, 197–98.

¹²² *Id.* at 196. Raymond points out that "[b]oth the acid rain and the grazing cases mandated extensive changes from the status quo patterns of use," to support his contention that "significant adjustments from current use patterns are common." *Id.*

¹²³ *Id.* at 188.

¹²⁴ *Id.* at 190.

¹²⁵ See A. Hatcher & A. Read, *supra* note 54 at 3–4.

as having fished in the particular fish stock in the prior twelve months) in 1984 to fish those stocks under pressure of over-exploitation; licenses to fish in fisheries deemed not under pressure were granted without a historical use requirement until 1989.¹²⁶ Over 8,000 licenses were originally granted; trading in licenses was initially restricted and penalized. A “trade penalty” reduced the capacity of any license traded by 10 to 30 percent for the purpose of reducing total fleet capacity.¹²⁷

Each fishing vessel must also have a quota. Until 1999, the quota was based on recent catch record—a notional quota was determined annually based on the most recent three years.¹²⁸ This system was abused and in 1999 the system was switched to a quota which was fixed for future years based on the 1999 allocation.¹²⁹ Interestingly, although the quota percentage is calculated per vessel, the quota is actually given to the Producers’ Organization¹³⁰ to which the vessel owner belongs, which is free to distribute the quota to vessels in its organization as it decides.¹³¹ In effect, the quota is granted to cooperatives that redistribute the quota to individuals and companies, limited by the requirement that the quota recipient have a licensed vessel. There is limited trading among the cooperatives but it is expected that the government will allow a full IFQ trading system in the near future.¹³² This hybrid system allocates quotas based on individual past effort but implements the allocation through a cooperative system.

Both aspects of the access system—fishing vessel licenses

¹²⁶ *Id.* at 10. Licenses continued to be issued for all fisheries to boats under 10 meters in length until 1993. *Id.* at 11.

¹²⁷ *Id.* at 4.

¹²⁸ *Id.* at 5.

¹²⁹ *Id.*

¹³⁰ These Producer Organizations are associations of vessel owners recognized under European Community law. There are twenty Producer Organizations, representing 95 percent of landings of the entire U.K.-licensed fleet. *Id.*

¹³¹ *Id.*; A similar “cooperatives” approach was recently tested in Chile where under a new law for the 2001–2002 fishing seasons, the formation of cooperatives to pool quota and utilize it efficiently among the quota owners was allowed, while direct trading of quota was not allowed. Julio Peña-Torres, *supra* note 45. For discussion of a similar experiment in the United States, see Scott C. Matulich et al., *Fishery Cooperatives as an Alternative to ITQs: Implications for the American Fisheries Act*, 16 MARINE RESOURCE ECON. 1 (2001).

¹³² See Hatcher & Read, *supra* note 54, at 6.

and quota allocation—are based on historical effort and ownership of capital. Grandfathering to allocate licenses to existing vessels in 1984 favored existing fishers and gave priority to past participation and boat ownership, effectively limiting entry into fishing for newcomers. The quota allocation is based on historical catch but is, in essence, distributed via the private sector based on the goals and rules of the Producers' Organizations.¹³³ The British government has not charged any fees for management of the system nor has it attempted to extract any of the rent from the resource.¹³⁴

Grandfathering for both license distribution and quota rights appears to support the status quo theories: those who were fishing continued to be able to fish. The purpose of the licensing and quota schemes apparently is to reduce capitalization of the fishing fleet, which is being achieved via liberalization of the trading of the quotas and license trading penalties.¹³⁵ The British government was able to receive support for the quota program from the fishers when it engaged in a buy-back of licenses in order to decommission part of the fleet and simultaneously allowed the remaining license holders to buy or receive the quota from the decommissioned boats; essentially, all fishers received the status quo (they could continue to fish) and received a bonus (a government buy-out of surplus boats).¹³⁶

B. *United States: Surf Clam and Ocean Quahog*

The Mid-Atlantic Fishery Management Council (MAFMC) created the first¹³⁷ federal IFQ program in the United States implemented under the Magnuson-Stevens Act for surf clams and

¹³³ The role of the Producers' Organizations appears comparable to a Common Property Regime, whereby internally the fishery is a commons but to those outside the producers' organization it is exclusive property, off-limits to those on the outside. See Rose, *supra* note 43, at 48–49.

¹³⁴ Hatcher & Read, *supra* note 54, at 9.

¹³⁵ *Id.* at 4.

¹³⁶ *Id.* at 6. A fisher could sell one boat and keep her other boat, and keep the quota allocation from both boats.

¹³⁷ Part of the blue fin Atlantic tuna fleet was regulated via IFQs starting in 1983, but surf clams and ocean quahogs were the first complete fishery in the U.S. to be moved to regulation via IFQ. Implementation of Recommendations of the International Commission for the Conservation of Atlantic Tunas, 48 Fed. Reg. 27,745, 27,753 (June 17, 1983) (to be codified at 50 C.F.R. pt. 285).

ocean quahogs¹³⁸ in 1990.¹³⁹ The MAFMC initially imposed a moratorium on new entrants into the surf clam fishery in response to concerns about over-fishing of surf clams in 1977.¹⁴⁰ The IFQ program was introduced to combat overcapitalization in the surf clam industry that occurred after the moratorium was imposed; although vessel permits had been capped in 1978, the permits could be transferred to replacement boats with larger capacities.¹⁴¹ To counteract the greater capacities per vessel and greater expertise and efficiency of the fishers, the fishing season was reduced to a few hours per quarter per vessel, existing rules prevented aggregation of hours from multiple boats to one boat, and hours could not be traded.¹⁴² The MAFMC addressed these growing problems by introducing tradable IFQs for the 1990 fishing season.¹⁴³ Although the IFQs were introduced primarily to address overcapitalization, the MAFMC was also motivated by problems of fishing exceeding TAC for surf clams and out of a concern for fisher safety.¹⁴⁴

The initial allocation for surf clams was based on the catch per vessel from 1979 through 1988 and on vessel capacity, with the quota allocated to the owner of the vessel.¹⁴⁵ For each vessel, the quota for surf clams was calculated by adding total catch for those ten years, with the most recent four years weighted twice as compared to the first six years; the lowest two years were discarded.¹⁴⁶ The results for all vessels were then summed and this sum, divided by the vessel's catch during the period, accounted for 80 percent of the vessel's quota allocation; the other 20 percent of the quota was calculated based on vessel size, a proxy for capital

¹³⁸ Both of these species are bivalve mollusks, also known as clams. Ocean quahogs are seen as a potential substitute for surf clams and have been described as "living rocks" due to their long life span—one specimen was estimated at 225 years of age. COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 281, 283–85.

¹³⁹ *Id.* at 60–61.

¹⁴⁰ *Id.* at 61.

¹⁴¹ *Id.*

¹⁴² *See id.* at 284, 288.

¹⁴³ *Id.* at 286–87.

¹⁴⁴ *Id.*

¹⁴⁵ *Id.* at 289. "Replacement vessels were credited with the catch of the vessels they replaced." *Id.*

¹⁴⁶ *Id.* ("Different formulas were used for allocations of surf clams in the Mid-Atlantic region versus ocean quahogs in both regions and surf clams in New England.").

investment.¹⁴⁷ The quota for ocean quahogs was based strictly on historical catch.¹⁴⁸

The method for computing the initial allocation appears to support all of the property theories discussed above. The result “was an initial allocation that came close to the status quo.”¹⁴⁹ The impetus to create the new rights regime was the realization of aggregate gains from the rationalization of capital expenditures of the fishing fleet.¹⁵⁰ Capital utilization under the old rights regime was horribly inefficient, with the MAFMC allowing vessels to be used for only twelve hours per month in 1986 in order not to exceed the TAC.¹⁵¹ The biomass of the fishery was rebuilt after the 1977 moratorium on new entrants, but in spite of the moratorium, the fleet capacity increased dramatically due to an increase in capital per vessel (larger boats with more equipment) and more efficient harvesting practices.¹⁵² One scholar estimates that only 10 percent of 1986 vessel capacity was required to efficiently harvest the TAC.¹⁵³ These estimates of overcapacity seem to have been proved by the resulting consolidation in the industry after the IFQ was implemented, with vessels fishing for surf clams reduced to 48 in 1994 from 133 in 1988; similar consolidations occurred for ocean quahog vessels and for quota ownership for both fisheries.¹⁵⁴

Arriving at the IFQ was contentious and took over ten years.¹⁵⁵ Part of this delay can be explained by lack of

¹⁴⁷ *Id.* at 289–90.

¹⁴⁸ *Id.* at 290.

¹⁴⁹ Bonnie J. McCay et al., *Individual Transferable Quotas (ITQs) in Canadian and US Fisheries*, 28 OCEAN & COASTAL MGMT. 85, 96 (1995).

¹⁵⁰ *Id.* at 89–90. See also MID-ATLANTIC FISHERY MANAGEMENT COUNCIL, AMENDMENT #8 FISHERY MANAGEMENT PLAN FOR THE ATLANTIC SURF CLAM AND OCEAN QUAHOG FISHERY 10–11, 17 (June 10, 1990) (hereinafter “FMP SCOQ”). Aggregate fishing gains, however, are not directly tied to the use of an IFQ program because the TAC is set independently from the method of allocation or the method of control of the fishery. McCay et al., *supra* note 149 at 89–90.

¹⁵¹ FMP SCOQ, *supra* note 150, at 43.

¹⁵² McCay et al., *supra* note 149, at 89; FMP SCOQ, *supra* note 150, at 10–11; COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 284.

¹⁵³ McCay et al., *supra* note 149, at 89.

¹⁵⁴ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 293; U.S. GEN. ACCT. OFF., GAO-03-159, *supra* note 36, at 1; cf. McCay et al., *supra* note 149, at 99–100 (describing the consolidation of clam, quahog and dragger fleets).

¹⁵⁵ See McCay et al., *supra* note 149 at 87 (The IFQ program was the “end

understanding of the IFQ, but mostly it was due to “heterogeneity of the industry.”¹⁵⁶ Part of the heterogeneity involved differences between large and small operations, with concerns over further consolidation in the industry and increasing returns to large operations at the expense of small businesses—a “skewness” issue.¹⁵⁷ The entire process occurred against the background norm of American participatory democracy, which appears to have also further hindered the negotiation process due to the need for consensus at many levels.¹⁵⁸

C. *United States: Alaskan Halibut and Sablefish*

Prior to the implementation of an IFQ program, the Alaska halibut and sablefish fisheries were, unlike the Surf Clam and Ocean Quahog fisheries, open access: any U.S. vessel could participate in the fishery after paying a nominal fee for a license.¹⁵⁹ The North Pacific Fishery Management Council (NPFMC) had only implemented area, season, gear, and individual vessel trip limits in its attempt to reduce harvesting to the TAC.¹⁶⁰ From the initiation of management under the NPFMC to the introduction of the IFQ program, TAC was exceeded each year from 1977 to 1994 on average by 5 percent.¹⁶¹

The initial allocation for halibut quota shares was granted to the 5,484 vessel owners and vessel leaseholders who fished commercially during 1988, 1989 or 1990.¹⁶² The quota per vessel was calculated based on the best five years of landings for the vessel from 1984 to 1990.¹⁶³ Quota shares specific to geographic areas were allocated based on the locations of landings during those same years; there were separate quota allocations for

product of over a decade of negotiations within the industry and between the industry and various governing bodies.”).

¹⁵⁶ *Id.* at 90–91.

¹⁵⁷ *Id.*

¹⁵⁸ *Id.* at 91.

¹⁵⁹ See COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 299.

¹⁶⁰ *Id.* at 300–01.

¹⁶¹ *Id.* at 300

¹⁶² *Id.* at 73, 309. The General Accounting Office reports slightly different numbers for initial quota holders, reporting 4,828 initial halibut quota holders and 1,051 initial sablefish quota holders. See U.S. GEN. ACCT. OFF., GAO-03-159, INDIVIDUAL FISHING QUOTAS: BETTER INFORMATION COULD IMPROVE PROGRAM MANAGEMENT 35, t.7 (2002).

¹⁶³ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 73.

different boat sizes and different geographic areas.¹⁶⁴ A small part of the quota was set aside for indigenous communities.¹⁶⁵ The NPFMC allocated sablefish quota to the 1,094 vessel owners or leaseholders who had commercial landings of sablefish from the same qualifying years of 1988, 1989 or 1990, but the vessel quota was calculated on a vessel's best five years of landings from the 1985 to 1990 fishing seasons.¹⁶⁶ This allocation formula rewarded effort and capital investment (boat ownership or leasing), one of the goals of the program.¹⁶⁷

The process and results of this IFQ program support the "status quo" theories—those unhappy with the allocation were those that received relatively smaller amounts of quota; they believed they received less than they had before (a reduction from status quo).¹⁶⁸ The allocation based on "best years" over a multi-year qualifying period resulted in less quota share per vessel than any vessel had in its best year, due to the summing of "best years" across all vessels.¹⁶⁹ This may explain the general dissatisfaction with the quota allocation among Alaskan fishermen, especially those that did not get a large (or any) quota share.¹⁷⁰ Each participant had an expectation based on the data they submitted, their "best" years; but since the total available in any one year is not expanding, due to constraints on the TAC, multiple participants' bests across a multi-year time period cannot result in each recipient receiving the equivalent of their best year. The level of opposition among those not receiving quota resulted in a group

¹⁶⁴ *Id.* at 309.

¹⁶⁵ See M. Hartley & M. Fina, *Allocation of Individual Vessel Quota in the Alaskan Pacific Halibut and Sablefish Fisheries*, in *FAO CASE STUDIES*, *supra* note 24, at 259.

¹⁶⁶ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 73, 309. See also U.S. GEN. ACCT. OFF., GAO-03-159, *supra* note 162, at 35, t. 7.

¹⁶⁷ Hartley & Fina, *supra* note 165, at 258; see also Black, *supra* note 15, at 737–38 (describing the initial allocation).

¹⁶⁸ Knapp, *Alaska*, *supra* note 46, at 43, 52; Knapp, *Initial Effects*, *supra* note 46, at 239, 245.

¹⁶⁹ More fishermen chasing the same TAC in a single year mathematically requires smaller share for everyone. See COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 309 ("The council's decision to allocate QS to 5,484 halibut fishermen and 1,094 sablefish fishermen represented 141% and 155% increases, respectively, over the maximum numbers of participants in any single qualifying year (3,883 for halibut and 706 for sablefish).").

¹⁷⁰ Knapp, *Initial Effects*, *supra* note 46, at 245.

formed to oppose IFQs,¹⁷¹ which led to an unsuccessful lawsuit challenging the Alaskan IFQ program.¹⁷² This level of dissatisfaction resulted from the large number of participants involved, one of Libecap's factors, and the large number of those that participated at any point of the qualifying period resulted in many dissatisfied (ex-)fishers.¹⁷³

That the program was implemented at all can be explained by two of Libecap's other factors: the aggregate size of the gains and availability of information about prior effort and investment by boat owners and lessors. As in the surf clam fishery, prior to the adoption of the IFQ program, the halibut and sablefish fisheries were limited to a few days of fishing per year, which led to inefficient use of the capital (the boats),¹⁷⁴ lost gear due to rushed fishing, higher wages to crew as all the labor was demanded at one time, and reduced income resulting from sales to frozen fish processors instead of sales of fresh fish throughout the season.¹⁷⁵ These inefficiencies created a vast potential to reduce expenses, making available large aggregate gains. Anecdotal evidence suggests that these gains appear to have been borne out by later events: there were complaints of reduced employment opportunities as crews began to be reduced, and were drawn from family members and other boat captains instead of hired hands (reducing wage costs for boat owners and leaseholders) and processors have complained vociferously about loss of market power.¹⁷⁶ Also, the fishing season now lasts a full eight months

¹⁷¹ See Lisa Busch, *Hook, Line and Quotas: A New System Rocks an Alaskan Village*, U.S. NEWS & WORLD REP., Nov. 4, 1996, at 56.

¹⁷² *Alliance Against IFQs v. Brown*, 84 F.3d 343, 345 (9th Cir. 1996) (upholding lower court's dismissal of the suit on summary judgment and describing as troubling that fishers who did not fish from 1988 to 1990 received no quota but that those who invested—possibly as tax shelters—in fishing boats that fished in those years, but may not have ever fished personally, received quota share).

¹⁷³ See Knapp, *Initial Effects*, *supra* note 46, at 245.

¹⁷⁴ But the fleet was probably not un- or under-used as over 70 percent of the halibut fishers received more than 75 percent of their income from fishing other species; halibut is and was historically a supplemental fishery for fishers engaged in other fisheries. Sablefish boats are similarly active in other fisheries. Hartley & Fina, *supra* note 165, at 253.

¹⁷⁵ See COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 305–07; Hartley & Fina, *supra* note 165, at 256.

¹⁷⁶ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10 at 76–77, 314–16; see also Tietenberg, *supra* note 4, at 220–21 (describing the social consequences of ITQs on communities and crews).

instead of just a few days, increasing capital utilization and reducing costs. Eliminating processors and employees from the quota allocation negotiation was consistent with Libecap's criteria for successfully allocating the quota by reducing the number and heterogeneity of negotiators;¹⁷⁷ however, the exclusion increased resistance to the program as a whole.

It would seem that the loss of income for crew members, processors, and fishers who received no quota or a quota share too small to be economically viable, would indicate a failure of Libecap's and Rolph's theories, as some participants were worse off than the status quo ante. This is partly explained by looking at other factors and Raymond's theory of integrating conflicting norms. First, the aggregate gains went to capital investors instead of laborers, who are more highly valued by the NPFMC, as was explicit in the goals of the IFQ plan from the NPFMC.¹⁷⁸ Second, there were clear information problems—catch records for boats were detailed but crew records were almost non-existent, so allocation was necessarily limited by available data.¹⁷⁹ Third, the goal of consolidation to achieve the capital rationalization required that some fishers exit the industry, thereby reducing capitalization. Therefore, some fishers necessarily received too small a share to fish, but were still rewarded for prior effort by receiving some quota, which could be sold for one-time income.¹⁸⁰ This is a reconciliation of two competing norms or goals: rewarding prior effort, but eliminating some prior participants. Fourth, the fishers who were allocated small quota share were equivalent to the status quo in that many pre-IFQ fishers relied on halibut fishing for a minority of their total fishing income¹⁸¹—those who were part-time halibut fishers before the IFQ allocation were not penalized by the IFQ program, relative to the pre-IFQ situation, if

¹⁷⁷ See LIBECAP, *supra* note 104 and accompanying text.

¹⁷⁸ See Hartley & Fina, *supra* note 165, at 258. "In principle, the initial allocation was intended to reward those who had invested in the fishery. While crewmembers had invested time, for which they had been paid, only vessel-owners and lessees had put monetary investments at risk to participate." *Id.* at 262.

¹⁷⁹ *Id.* at 258.

¹⁸⁰ Significant consolidation did occur, with a reduction in the number of quota holders by 24 percent in halibut and 18 percent in sablefish. The reductions ranged from 7 percent to 31 percent in the different geographic areas. COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 315.

¹⁸¹ Hartley & Fina, *supra* note 165, at 253.

they received insufficient quota to fish halibut full-time. The allocation balanced the various claims, as the court in *Alliance v. Brown* stated, “Congress required the Secretary to exercise discretion and judgment in balancing among the conflicting national standards. . . . The Secretary is allowed, under this authority, to sacrifice the interests of some groups of fishermen, for the benefit as the Secretary sees it of the fishery as a whole.”¹⁸²

D. *United States: South Atlantic Wreckfish*

This fishery began with two vessels and 29,000 pounds of catch in 1987 and expanded to eighty vessels and four million pounds of catch by 1991.¹⁸³ The fishery was initially controlled via trip limits, and area and gear restrictions; although a permit was required, it was essentially open access for U.S. vessels. To meet the TAC, the South Atlantic Fishery Management Council (SAFMC) reduced the season length.¹⁸⁴ As a result, derby fishing developed and profitability decreased.¹⁸⁵ In response to the pressures on the fishery, but in the absence of reliable stock assessments, the SAFMC developed an IFQ program to “rationalize” the developing fishery. To be eligible to receive an initial IFQ share, a permittee had to have landed more than 5,000 pounds of wreckfish in either 1989 or 1990.¹⁸⁶ Shares were then distributed with 50 percent of the share in proportion to a permittee’s landings in the years 1987 to 1990, and with the other 50 percent distributed equally to all eligible permittees.¹⁸⁷ Moreover, “no single business entity” could be allocated more than 10 percent of the initial shares.¹⁸⁸

Again, the Council used prior effort to allocate shares to owners of capital. Although proportionality only accounted for 50 percent of the allocation, prior participation was still required for any share. The 10 percent maximum allocation limit reflected the goals of the Magnuson-Stevens Act, by preventing concentration

¹⁸² *Alliance Against IFQs v. Brown*, 84 F.3d 343, 350 (9th Cir. 1996).

¹⁸³ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 66–67.

¹⁸⁴ *Id.*

¹⁸⁵ *See id.* at 67–68.

¹⁸⁶ *Id.*, at 69. *See also*, J.R. Gauvin, *Initial Allocation of Individual Transferable Quotas in the US Wreckfish Fishery*, in *FAO CASE STUDIES*, *supra* note 24, at 94.

¹⁸⁷ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10 at 69.

¹⁸⁸ *Id.*

of ownership,¹⁸⁹ although the trading scheme did not prevent later accumulation of quota share.¹⁹⁰

The impetus to implement IFQs was more economic than biological, as understanding of the stock size, and whether it is connected to or separate from other fisheries (i.e. wreckfish fisheries off the coast of Portugal and the Azores), was and continues to be unknown.¹⁹¹ In fact, the impetus for the IFQ appears to have been entirely commercial, with the fishers themselves asking for regulation to address “declining earnings and increasing user conflicts.”¹⁹² The implicit goal of creating the IFQ was to reduce overcapitalization.¹⁹³ One observer to the process hypothesized that this initial allocation was intended to compensate, due to inability of the TAC to support all the recipients of the quota, fishermen exiting the fishery for gear expenditure incurred when earlier entering the fishery.¹⁹⁴ These fishers received at least the status quo in the sense that they received money for their quota in exchange for (declining) future income from fishing.

This method of allocation differs from the other U.S. examples of initial allocation by only allocating half of the quota based on grandfathering and the other half equally to all participants. This appears to be a compromise between the (relatively) early entrants into the fishery and later participants who complained of recent significant expenses made to enter the fishery.¹⁹⁵ The compromise between investment and prior

¹⁸⁹ See 16 U.S.C. § 1853(d)(5)(C).

¹⁹⁰ See Gauvin, *supra* note 186, at 95.

¹⁹¹ See *Id.* at 91–92 (stating that it has never been resolved whether wreckfish off the southeastern United States are a separate stock from wreckfish fisheries off the coast of Portugal and the Azores).

¹⁹² Gauvin, *supra* note 186, at 91 (citations omitted). “Fishermen continued to press managers for measures to address declining earnings and increasing user conflicts” because input control measures were failing to correct these problems.” *Id.*

¹⁹³ Gauvin, *supra* note 186, at 93 (“Given that the plan acknowledged that there were more vessels in the fishery prior to ITQs than the fishery could support and economic returns were thought to be rapidly declining, the implicit policy objectives of the initial allocation were to allow free trade of wreckfish shares among a pool of participants deemed too large for the fishery to support. This, one can surmise, was expected to resolve the problem of overcapitalization.”)

¹⁹⁴ *Id.* at 93, 96.

¹⁹⁵ See *id.* at 93–95.

beneficial use demonstrates the ability of two competing norms to be reconciled, as per Raymond's theory. Congruent with Libecap's theory, the IFQ plan was implemented relatively quickly, partly because the participants themselves realized the losses from not creating an IFQ and there were only a small number of relatively homogenous¹⁹⁶ participants involved.

E. *United States: Spiny Lobster in the Florida Keys*

The spiny lobster program, administered jointly by the Gulf Marine Fisheries Council, the South Atlantic Marine Fisheries Council, and the State of Florida, regulates the number of lobster traps available for fishers. Historically, the fishery was controlled only by the issuance of a license, which was not capped, but which remained fairly stable with 4,000 licenses outstanding during the 1980s.¹⁹⁷ While take remained constant, the number of traps increased from 200,000 to one million, and state, federal, and local officials grew concerned about preventing the deterioration of management efficiency, reducing conflicts over traps, and maintaining income for traditional fishermen groups.¹⁹⁸

The Councils and the State of Florida created a system capping the number of traps using a trap certificate system¹⁹⁹ and authorized trading in the trap certificates. The initial allocation of the trap certificates was based on individual landings, with the quota share calculated by the individual fisherman's single best year from a three-year qualifying period. As with the wreckfish system, there was a cap on the percent of the total share any single

¹⁹⁶ Most participants were fishers that also participated in grouper or shrimp fisheries. *Id.*

¹⁹⁷ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 318.

¹⁹⁸ *Id.* at 318–19.

¹⁹⁹ Although the management units are individual traps, trading is done via the trap certificates; owning one certificate entitles to the use of one trap. *Id.* at 320.

The program described for this fishery is based on individual transferable 'trap certificates,' a gear and effort-based system. There are no restrictions on the amount of catch, either for the fishery as a whole or for individuals. Input limitations are equivalent to output limitations only if there are no substitutes for the limited input.

Id. at 317 n.4. Accordingly, although "the program appears to achieve many of the objectives that are also achieved by IFQ programs," the spiny lobster program is not technically an IFQ program; rather it is properly thought of as a "tradable permit program." *Id.*

fisherman could be allocated initially.²⁰⁰ Here again, prior participation was rewarded, but because of lack of capital involved in the fishery, capital was not rewarded.

The certificates for the traps are tradable, but there is a windfall tax of 25 percent assessed on the first sale outside of the immediate family of the trading fisher, with 90 percent of the tax revenue earmarked for monitoring and enforcement and 10 percent for the General Fund of the State of Florida.²⁰¹

The catch, although not subject to a TAC limit, is restricted by the number of lobsters that can be caught per licensee per day (six)²⁰² and by the season.²⁰³ As such, the fishery is not operating under an IFQ system, but it does have many of the characteristics of one, as fishing for lobsters is controlled by the number of traps, which are licensed, capped, and tradable under a state controlled system.

This example seems to support the “status quo” theories. All prior participants could continue to participate in the lobster fishery at no additional cost. Upon implementation of the IFQ program, the amount of lobster shareholders could catch was not reduced; the program only reduced the number of traps they could use, hence the program reduced expenses to all fishers equally and proportionally. The new entrants were the only group made worse off as they had higher costs due to the trap certificate purchase requirement.²⁰⁴

F. *New Zealand*

New Zealand regulates over 30 species of fish in different geographical management areas, resulting in the regulation of over 179 different fish stocks.²⁰⁵ For inshore fisheries, New Zealand implemented a moratorium²⁰⁶ on new entrants in 1982 and in

²⁰⁰ *Id.*

²⁰¹ *Id.* at 321.

²⁰² 50 C.F.R. 640.23(b)(1).

²⁰³ The commercial and recreational season for using traps is from August 6 to March 31. 50 C.F.R. 640.20(b)(1). There is a special two day recreational season for using “hoop nets” and diving, for which the per person limit is six per day. 50 C.F.R. 640.20(b)(2); 50 C.F.R. 640.23(b)(2).

²⁰⁴ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 321.

²⁰⁵ *Id.*, at 347.

²⁰⁶ R. Connor, *Initial Allocation of Individual Transferable Quota in New Zealand Fisheries*, in *FAO CASE STUDIES*, *supra* note 24, at 223.

1983–84 it expelled part-time fisherman.²⁰⁷ In 1985 New Zealand implemented an Individual Transferable Quota (ITQ) system with the initial allocation based on fishing effort over the prior three years.²⁰⁸ In contrast to the IFQ programs elsewhere, the ITQ in New Zealand initially was a quota for a fixed amount of fish (measured by weight) to harvest, not a percent of the TAC. Each year the New Zealand government engaged in a reverse auction to “buy back” quota to reduce the allocated quota to the TAC level;²⁰⁹ the auctions netted approximately 75 percent of the desired reduction and the government achieved the remaining reduction via pro rata cuts while promising to restore the cuts when the TAC was increased.²¹⁰ In 1990, the fixed tonnage ITQ was replaced by a percentage quota system, with the percentages based on the quota originally allocated by weight.²¹¹

A second system for several deepwater fish stocks was developed earlier, in 1982, with allocations based on “investment in catching, onshore capital, and onshore throughput”²¹² as well as on past catch.²¹³ The quota was initially non-tradable and was granted to “companies” and not to individual vessels, which gave flexibility to the quota holders to fish in the manner they deemed most efficient.²¹⁴ In these deepwater fisheries, the government retained some of the ITQ and allocated it by tender.²¹⁵ Due to the capital intensive nature of these fisheries, the initial quota in 1982 was only allocated to firms or consortia that qualified for a high minimum amount of quota. The government auctioned the remaining quota and the additional quota was made available to new entrants when the TAC was expanded.²¹⁶ With the development of the ITQ for the inshore fisheries in 1986, the government converted these deepwater fisheries to an ITQ

²⁰⁷ *Id.* at 225. Part-time fishers were defined by regulation as those earning less than 80 percent of total income from fishing. *Id.*

²⁰⁸ *Id.* at 234 (stating that inshore allocations were based on the catch history over the three years 1982–1984).

²⁰⁹ *Id.* at 235.

²¹⁰ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 348–49.

²¹¹ Connor, *supra* note 206, at 231.

²¹² COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 348.

²¹³ Connor, *supra* note 206, at 233.

²¹⁴ *Id.* at 229.

²¹⁵ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 348.

²¹⁶ See Connor, *supra* note 206, at 233.

program.²¹⁷

These quota allocations demonstrate a clear preference for prior beneficial use, with deviations from “prior use” allocation to accommodate large investments. Small part-time fishers, apparently less dependent on fishing, were excluded from the inshore fisheries, and in the deep-water fisheries, all of the freely-granted quota were given to large companies. The fishers who received quota all had great incentives to agree with the quota program as they could continue to fish—maintaining the status quo—and the government would pay them (they received an aggregate gain via side payment) not to fish the quota the government allocated in excess of the TAC as part of the initial allocation. The cultural background facilitated negotiation and acceptance of the New Zealand government’s IFQ program because the “right of [the] central government to control resource access was universally acknowledged.”²¹⁸ The resulting quota allocation did not cause large social dislocation; the status quo was relatively maintained, further facilitating agreement.²¹⁹

V. DO THE THEORIES DESCRIBE THESE ALLOCATIONS?

All of the examples support the “status quo” theory, at least with respect to fishing boat owners. In fisheries, as in Rolph’s four examples of programs in the typology of “programs to control externalities”, “rights have been allocated to historic users and the allocations have been based on historic use.”²²⁰ Excluding

²¹⁷ *Id.* at 229.

²¹⁸ *Id.* at 248.

²¹⁹ *Id.* Due to factors not relevant to the IFQ discussion, the New Zealand initial allocation did not last long. As a result of law suits and a settlement with the government, the Maori now collectively control between 40 percent to 50 percent of the commercial fishing industry through control of quota shares. *See id.* at 245; *cf.* Tietenberg, *supra* note 4, at 210 (describing the percent of Maori control of New Zealand’s fisheries arising from the Treaty of Waitangi Settlement Act of 1992). The Maori, initially ignored in the ITQ allocation process as only representing subsistence fishing, successfully negotiated control from the government of many of the ITQs based on a 19th Century treaty between the English settlers and the Maori. *See* Connor, *supra* note 206 at 233. For a review of the Treaty of Waitangi and the allocation of quota share to the Maori by the Government of New Zealand, see Andrew Day, *Fisheries in New Zealand: The Maori and the Quota Management System*, (Paper prepared for the First Nation Summit’s Panel on Fisheries, March 2004), available at <http://www.fns.bc.ca/pdf/NewZealand.pdf>.

²²⁰ Rolph, *supra* note 64, at 52. The four examples are radio broadcast frequencies, groundwater pumping rights, development rights, and air pollution

consideration of crew members and those industries that support the fishing industry, the status quo was maintained to the amount mathematically possible in all of the examples considered. Rolph's theory thus seems valid, as long as the definition of "status quo" is limited to boat owners. This limitation demonstrates the need to use Libecap's and Raymond's "background norms" to help further understand the allocation of the quotas and the exclusion of certain groups.

Although a full analysis of U.S. social and political attitudes towards labor and capital are well beyond the scope of this Note, a few well-known facts can be re-stated to make the general point that there is a bias towards capital over labor in the United States, a bias reflected in the IFQ programs.²²¹ The general societal bias for capital over labor is reflected in the fact that, unlike other Western democracies, the United States never had a viable socialist party, that union participation rates have dropped precipitously over the last 25 years;²²² that the average inflation-adjusted income for non-supervisory workers was lower in 2002 than it was in 1963;²²³ and that the capital gains taxes on investments are lower than taxes on labor. This bias is a background norm against which the negotiation for a new allocation of rights occurs, so it is perfectly consistent that the status quo for capital owners is given higher priority than the status quo for laborers.

The bias in favor of capital does come into conflict with other values, such as prior effort, community development and stability. Where a community's needs are concentrated and clear, such as in the indigenous communities recognized in the Alaska IFQ programs, a concession to these needs will be made at the expense of the norm of giving quotas to capital owners with a history of beneficial use. Thus, small communities may be granted quotas despite not being capital-owning prior beneficial users.²²⁴ In the

rights. *Id.* at 49.

²²¹ See *supra* note 113 and accompanying text.

²²² Elaine Bernard, *The Divergent Paths of Organized Labor in The United States and Canada*, 1, 3 (unpublished article, on file with Harvard Trade Union Program), at <http://www.law.harvard.edu/programs/lwp/eb/canusa.pdf> (last visited June 29, 2005).

²²³ The average weekly earnings for private sector non-managers were 7.8 percent lower in 2002 than in 1977. Exec. Office of the President of the United States, *Budget of the United States Government, Fiscal Year 2004* tbl.B-47 (2003), available at <http://www.gpoaccess.gov/usbudget/fy04/sheets/b47.xls>.

²²⁴ Hartley & Fina, *supra* note 165, at 259, 262.

surf clam, wreckfish, halibut, and sablefish IFQ programs, when capital came into conflict with itself, a situation where new capital wanted to be considered equally with older investments of capital, accommodations were made to give extra weight to recent beneficial use hence providing an implicit bonus to recent capital investments. These conflicts of values, and their resolutions, seem to demonstrate Raymond's thesis that conflicting value norms can be reconciled by looking to the equity values in the society.²²⁵

The examples support Libecap's factors. To the extent that the aggregate gains of capital and expense reduction from the new regimes were clear, the new IFQs were implemented. In all the American examples, the fisheries were drastically overcapitalized as evidenced by the extremely short fishing derbies. Where the number and heterogeneity of the participants was low, as in the wreckfish fishery, the allocation decision happened relatively quickly. The greater heterogeneity of the surf clam fishery caused delays, and the great number of fishers in the Alaskan case resulted in disputes and unhappiness. Libecap's list of factors appears to be the most useful of the explanatory theories.

VI. RECOMMENDATIONS

In light of recent Congressional interest in amending the Magnuson-Stevens Act with respect to individual fishing quota schemes, this Note will provide a few²²⁶ recommendations on changing the allocation process. An improved allocation process can create incentives to accepting an IFQ system and increase the chances of its implementation. This Note will present two types of recommendations: substantive changes, such as the use of side payments, and process changes, such as changing the fisheries targeted and improving the quality and availability of information about the targeted fisheries.

This Note's suggestions are made against the backdrop of the many fisheries management recommendations recently proffered by various groups. These other groups include the U.S. Commission on Ocean Policy, a body appointed by President Bush to provide research and recommendations on ocean policy. The

²²⁵ RAYMOND, *supra* note 4, at 188, 197.

²²⁶ A full discussion of the legal and political viability of all of the various alternatives is beyond the scope of this Note, so this brief list of recommendations is based on the observations made earlier in this Note about property theory and the examples of allocations examined.

Commission wrote a report endorsing the use of IFQs and other dedicated access privileges in order to reduce the overcapitalization of the fishing fleets and to improve fishing safety.²²⁷ Many other groups have opined on initial allocations, notably the Pew Oceans Commission²²⁸ and the Marine Fish Conservation Network.²²⁹ Additionally, legislation on this topic was introduced, but not passed, in both the House and the Senate in 2003 and 2004.²³⁰

A. *Structural Adjustment Funded by the Capital
Gains Tax on Quota Sales*

Protecting the power and wealth configurations of the status quo is important in gaining acceptance for an IFQ program. However, the granting of an IFQ, even if based on grandfathering, will reduce wealth (or the belief in the opportunity for wealth), for those that receive no quota share or whose employment or processing work declines as a result of the IFQ program, thereby creating opposition to implementation of the IFQ. The Florida spiny lobster program provides a hint as to how to remedy this situation: create a tax on the sale of quota shares and recycle the proceeds into side-payments to prior fisheries participants who receive little or no quota allocations. Unfortunately, the size of the Florida spiny lobster tax and its “first sale only” nature will likely create great distortions in the resale market²³¹ reducing the

²²⁷ USCOP, *supra* note 7, at 247–48. Although the report and the White House response mention issues and make recommendations concerning the initial allocation, to be discussed below, neither document endorses any particular method or goals for the initial allocations. COMMITTEE ON OCEAN POLICY, COUNCIL ON ENVIRONMENTAL QUALITY, U.S. OCEAN ACTION PLAN: THE BUSH ADMINISTRATION’S RESPONSE TO THE U.S. COMMISSION ON OCEAN POLICY 18–19 (Dec. 17, 2004), *available at* <http://ocean.ceq.gov/actionplan.pdf>.

²²⁸ See PEW OCEANS COMM’N, AMERICA’S LIVING OCEANS: CHARTING A COURSE FOR SEA CHANGE—A REPORT TO THE NATION 109–15 (2003), *available at* http://www.pewtrusts.org/pdf/env_pew_oceans_final_report.pdf.

²²⁹ See MARINE FISH CONSERVATION NETWORK, INDIVIDUAL FISHING QUOTAS: ENVIRONMENTAL, PUBLIC POLICY, AND SOCIOECONOMIC IMPACTS (March 2004) *available at* http://www.conservefish.org/site/pubs/network_reports/ifqwhitepaper.pdf.

²³⁰ See Fishing Conservation and Management Amendments Act of 2004, S. 2066, 108th Cong. § 11(a) (2004); Fishing Quota Act of 2003, S. 1106, 108th Cong. § 2(a) (2003); *see also* H.R. 2621, 108th Cong. (2003) (Fishing Quotas Standards Act of 2003).

²³¹ A “first sale” seller has a 25 percent disadvantage compared to a resale seller, drastically reducing “first sale” seller’s return compared to subsequent

efficient (re)allocation of the resource.

Instead, the proceeds of the existing federal and state capital gains taxes levied on the sale of quota shares should be diverted to funding structural adjustment programs for fishing industry workers and communities, similar to the adjustment programs for U.S. communities harmed by the impacts of NAFTA.²³² Such dedicated tax programs have already been implemented in the United States. For example, at the local level, some municipalities have implemented “tax increment financing” (TIF) schemes to pay for infrastructure improvements. These schemes lead to increased property values; the normal property tax rate applies (no increase or decrease in the tax rate), but the increased tax revenue resulting from rising property values is then dedicated to pay for those infrastructure improvements.²³³ Alternatively, if diverting tax

sellers.

²³² The NAFTA Transitional Adjustment Assistance Program under the Department of Labor provides job training, career counseling and income support to workers made un- or under-employed due to NAFTA job relocation. See U.S. Dep’t of Labor, Employment and Training Admin *Fact Sheet: If Imports from or a Shift in Production to, Canada or Mexico Cost You Your Job... Apply for NAFTA-Transitional Adjustment Assistance Program*, at <http://www.doleta.gov/programs/factsht/nafta.htm> (last visited June 29, 2005). A side-payment scheme for miners of high-sulfur coal likely to be hurt by sulfur dioxide emissions trading was defeated by only a single vote in the Senate during debate on the Clean Air Amendment of 1990. See Paul L. Joskow & Richard Schmalensee, *The Political Economy of Market-Based Environmental Policy: The U.S. Acid Rain Program*, 41 J. L. & ECON. 37, 50 (1998).

²³³ In a prototypical TIF, the municipality designates an area as “blighted” and, with financing from bonds, begins construction, either directly or through a developer, of infrastructure to improve the desirability of that area. Any increased property value in that area is assumed to result from the infrastructure improvements and as such, the increased property tax revenue is dedicated to repaying the bonds that financed the infrastructure. IFQ programs, like infrastructure investments, are actions taken by the government which create or increase value where there was none before; there would be no capital gains or estate tax on the transfer of IFQs without the government first creating the IFQ. In parallel to the logic of TIFs, it makes sense to use this incremental tax revenue to pay for the costs of the IFQ program, giving the side-payments to those made worse-off: the crew and processors who did not receive quota and who are financially worse off after the IFQ program is implemented. Cf. NEW YORK CITY INDEPENDENT BUDGET OFFICE, *LEARNING FROM EXPERIENCE: A PRIMER ON TAX INCREMENT FINANCING* (2002) available at <http://www.ibo.nyc.ny.us>; Frank S. London, Note, *The Use of Tax Increment Financing to Attract Private Investment and Generate Redevelopment in Virginia*, 20 VA. TAX REV. 777, 778 (2001) (describing TIFs). Obviously, any such program must have clear guidelines for recipient designation and must have a clear end point (the earlier of either full-payment to all injured parties or a set number of years) to prevent

money in this manner is politically infeasible, federal money currently earmarked for fishing vessel construction assistance should be diverted into structural adjustment programs for communities harmed by changes in fishing practices.²³⁴

The diversion of revenue from the general Treasury would only occur for as long and in the amount needed to compensate those directly harmed by the IFQ allocation. The diversion of the capital gains tax would recoup some of the value given to the quota holders without hindering the market for quota beyond the degree to which the normal tax structure impacts any market. Because the use of the tax money would compensate those harmed by the IFQ scheme it would provide an equivalent to the status quo for these fishery participants.²³⁵ This compensation program will help reduce opposition to the IFQ scheme from those excluded in the initial allocation, thereby increasing the political viability of the allocation of IFQs.²³⁶ This program will also make the allocation process easier to negotiate because instead of dividing the quota pie into ever smaller slices to accommodate all claimants, some groups can be removed from negotiations completely by giving them these compensating side-payments, thereby decreasing the number and heterogeneity of the negotiators.²³⁷ This will leave larger quota shares for the remaining participants, increasing the likelihood of acceptance of the IFQ program.²³⁸

the program from becoming an uncontrolled slush fund. *See, e.g., id.* at 783–86 (discussing some safeguards implemented in TIFs).

²³⁴ *Cf.* USCOP, *supra* note 7, at 248 (recommending Congress repeal “all programs that encourage overcapitalization of fishing fleets”).

²³⁵ Compensating “side payments” are important to creating the political dynamic to allow a new property regime formation. *See* LIBECAP, *supra* note 12, at 5–6.

²³⁶ *See id.* at 5–6.

²³⁷ Providing side-payments to processors is an economically superior option for a compensation system than the current effort to create “processing quotas.” A system with processing, or processor, quotas requires fishers to sell to a limited number of buyers and this can greatly reduce efficiencies in the market and transfer pricing power from sellers and consumers to the middle-men processors. *See generally* DONALD R. LEAL ET AL., OVERCOMING THREE HURDLES TO IFQS IN U.S. FISHERIES: A GUIDE FOR FEDERAL POLICY MAKERS 4–6 (2004), http://www.ifqsforfisheries.org/pdf/pr_ifq_hurdles.pdf (describing and critiquing processor quotas).

²³⁸ Side-payments are also an economically more efficient option than restricting transferability of the quota, which is sometimes done to achieve policy goals, such as protecting certain types or groups of fishery participants.

B. *No Auctions—Continue Allocation by Historical Effort*

Despite the background norm of the public trust doctrine²³⁹ and the arguments of those espousing it,²⁴⁰ the government should not change the law and auction IFQ allocations for those fisheries where IFQs are deemed the appropriate regulatory structure. Auctions will reduce the resource rents (the value of engaging in fishing in that fishery) that will accrue to the quota holders by reducing the quota-holders' net wealth position through payment to the government in the auction. This reduces the benefits for the quota-holding fisherman by channeling some of the value to the government and "sharply reduc[ing] their enthusiasm for it."²⁴¹ This would also violate Libecap's first requirement for successful property regime change, as the quota holding fisherman will be, at best, at a status quo position and many fishers will believe they are worse off if they lack the financial resources to bid successfully for quota share.²⁴² The relatively miniscule benefit to the Federal Treasury from auctions is dwarfed by the additional opposition that would be engendered by a rent-reducing auction.²⁴³ If a regional fishery management council decides to implement an IFQ because of the benefits of this type of regulation,²⁴⁴ the method of

Tietenberg, *supra* note 4, at 223 ("The additional restrictions [of transferability] generally do lower the value of the resource.")

²³⁹ See discussion *supra* Part 3.A.

²⁴⁰ See, e.g., MACINKO & BROMLEY *supra* note 47 (2002); MARINE CONSERVATION FISH NETWORK, *supra* note 229.

²⁴¹ LIBECAP, *supra* note 12, at 84; see also Tietenberg, *supra* note 4, at 208 (noting that historic use allocations increases "likelihood of adoption" for a variety of factors).

²⁴² See *Individual Fishing Quotas (IFQs): Oversight Hearing Before the Subcomm. on Fisheries Conservation, Wildlife and Oceans of the H.R. Comm. on Resources*, 107th Cong. 36 (2002) (prepared statement of Donald R. Leal, Senior Associate, Political Economy Research Center) (opposing auctions because of perceived unfairness inherent in different access to capital).

²⁴³ Total estimated quota values for sablefish and halibut are \$2–3 billion to \$3–4 billion, which is an increase over the initial values (depressed due to uncertainty about the right and the TAC). COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 378. This one-time auction income is minimal compared to the annual deficits. The federal deficit for 2003 was \$374.2 billion. FINANCIAL MANAGEMENT SERVICE, DEPT. OF THE TREASURY, FINAL MONTHLY TREASURY STATEMENT (Sept. 2003), available at <http://www.fms.treas.gov/mts/mts0903.pdf>.

²⁴⁴ As stated above, *supra* notes 3–4 and accompanying text, this Note does not argue for or against IFQ programs. For a discussion of the normative arguments for IFQs, see Wyman, *supra* note 109, § II.A.2; for problems addressed by IFQ programs, see, *supra* notes 30–35 and accompanying text. See

allocation that it chooses should not be one that reduces the likelihood that the IFQ program will be accepted by the impacted fishing communities and hence reduces the chance that it will be implemented.²⁴⁵

This Note recommends that allocations should continue to be based on historical effort as measured by landings and capital investment in boats.²⁴⁶ Additionally, if it is possible to measure accurately past crew participation, then quota should be allocated to skippers and crews as well as to owners, since this allocation will create an IFQ program with future potential income, per participant, that most closely reflects prior participation and prior financial results. By hewing closely to a Pareto Optimal goal while rewarding those politically and culturally considered deserving of fishing quotas—fishers historically in the fishery²⁴⁷—the allocation will increase the chances of acceptance of the IFQ.²⁴⁸

In accepting this argument, objections that free allocations are undeserved windfalls for profit seeking fishers and “amount to a giveaway of a public resource”²⁴⁹ must be addressed. A windfall is defined as “an unexpected or sudden gain or advantage.”²⁵⁰ The reason free quota is described as a windfall is because it is an asset with resale value that the fisher did not have before the IFQ program and that the fisher did not have to pay for. This objection does not describe a quota holder from the perspective of the quota

also COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 281–365 (discussing the objectives and economic and biological outcomes of U.S. and foreign fisheries that adopted IFQ programs); Tietenberg, *supra* note 4, at 197–98, 221–24 (discussing objections to tradable permit programs and evaluating three examples).

²⁴⁵ See generally MARINE FISH CONSERVATION NETWORK, *supra* note 229, at 5 (“Researchers have noted that windfall gains are needed to ensure the cooperation of current participants.”)

²⁴⁶ For arguments in support of historical use allocation, see Tietenberg, *supra* note 4, at 208 (“[A]llocating rights based on historical use . . . serves to recognize and to protect those investments [previously made in extracting that resource.]”).

²⁴⁷ *Id.* at 210 (discussing limiting transferability to protect smaller fishing enterprises and coastal fishing villages, which were seen as “having a special value to society”).

²⁴⁸ *Id.* at 208.

²⁴⁹ MARINE FISH CONSERVATION NETWORK, *supra* note 229, at 5; see also Peter Passell, *U.S. Giving Certain Boat Owners Exclusive Rights to Fish Off Coast*, N.Y. TIMES, April 22, 1991, at A1 (quoting one economist as saying, “[a]ny allocation other than to the nation would be an injustice”).

²⁵⁰ WEBSTER’S NINTH NEW COLLEGIATE DICTIONARY 1351 (1988).

holder. Prior to implementation of an IFQ program, a fisher in a given fishery has an expectation of being able to continue to fish as in the past, with an expectation of future income similar in value and variability to that earned in the past. After the implementation of the IFQ program, the quota holder is in exactly the same position, with two exceptions: the fisher is now protected from new entrants and protected from the risk of facing a fishery closure before catching any fish. If the quota holder sells his or her quota, the income from the sale will equal the net present value of the expected future income from fishing, and the seller can no longer fish. While the quota provides a measure of risk reduction to the quota holder, from an income perspective the quota-holding fisher is in the same financial position before and after the implementation of the program.²⁵¹ Of course, new entrants now have to pay to enter the fishery, but as the goal of most fisheries regulation is to reduce overfishing and overcapitalization, restricting new entrants will likely be the goal or result of most fishery management plans.

C. *Improved Scientific Predictions for the Collapse of Fisheries*

Improved scientific predictions of biomass and future commercially available fish in a fishery can provide an incentive to accept an IFQ regime. Libecap's theory requires either the existence of the potential for aggregate gain or the avoidance of aggregate losses in order to motivate parties to negotiate for a new rights regime.²⁵² The examples of IFQ programs discussed in this Note, especially the wreckfish fishery, indicate that once it is clear that there is a potential for lost income, or that income could be increased by a new regime, the participants are more willing to negotiate for a new property rights regime. If the prospect of a reduced TAC is more scientifically certain, the awareness of

²⁵¹ If incomes for the fishers rise as a result of increased capital efficiency or increased revenues from additional fresh fish sales, instead of selling to the frozen food processors this is income from the success of the program, not the quota itself, and raises the question of whether producers or consumers should be taxed more highly when the government, through effective regulation, increases the efficiency of a market. *See supra* note 175. Should fish consumers pay a higher sales tax for having fresh halibut available for a longer period of time each year? If the Sarbanes-Oxley Act or investigations by the New York State Attorney General reduce corporate fraud and increase stock market efficiency, should capital gains taxes rise to pay for that "windfall" gain?

²⁵² *See supra* text accompanying note 101.

overcapitalization in the fishery, and hence lost return on investment, becomes more apparent. Recommendations 19-1 through 19-9 of the U.S. Commission on Ocean Policy report urge that fishery management plans (whether using IFQs or other types of management tools) rely more heavily on scientific assessment in establishing TACs and reduce industry influence on setting the TAC.²⁵³ If fisheries participants lost their current influence over TAC and were immediately forced to confront shrinking fisheries (instead of waiting for the fishery to collapse), the impetus to seek greater aggregate gains via another option, such as an IFQ,²⁵⁴ would occur sooner and more forcefully. The effect of this would be to increase the chances for agreeing upon an IFQ because the alternative, increasing the TAC by controlling the fishery management plan, has disappeared.

D. *Implement IFQ Programs in New and Under-exploited Fisheries Soon*

Threats to the status quo produce opposition to IFQ regimes,²⁵⁵ whereas opportunities for aggregate gains create support for IFQs.²⁵⁶ New and under-exploited fisheries provide the opportunity for the aggregate gains and minimal opposition conducive to allocating quota in an IFQ program.²⁵⁷ The expected long-term economic benefits to current fishers may be large enough to create support for an IFQ program.

If a fishery is not yet nearing full biological exploitation, then allocation of quota shares provides the possibility of assigning quota in excess of current actual catch. This creates windfall gains for the current fishers via possession of quota rights to fish for more than they have fished historically, relief from the pressure of new entrants, and relief from any incipient pressure to invest new

²⁵³ USCOP, *supra* note 7, at 234–39.

²⁵⁴ Aggregate gains can result from increased capital efficiency, possibly increased revenues from sales, and reduced gear loss and risk of death. *See* Tietenberg, *supra* note 4, at 220 (“One review of 22 fisheries found that the introduction of ITQs increased wealth in all 22.”); Gunnar Knapp & Dan Hull, *The First Year of the Alaska IFQ Program: A Survey of Sablefish Quota Share Holders 2* (1996) (prepared for the Alaska Department of Commerce and Economic Development and the Alaska Department of Fish and Game) (on file with journal).

²⁵⁵ *See supra* Part 3.B–C.

²⁵⁶ *See supra* text accompanying note 101.

²⁵⁷ *See* LIBECAP, *supra* note 12, at 82.

capital in order to increase fishing speed and efficiency. Alternatively, the Regional Fishery Management Council can opt to distribute only quota shares representing the historical level of catch and the remaining quota (the amount remaining to catch up to the TAC) can be auctioned off either immediately or over several years as demand increases, or distributed in ways to provide benefits to other fishery participants, such as to local communities. Under both options, the fact that there is no pressure on the TAC allows the councils to be more generous in distribution to all historical fishers, including crew members, if crew records are available.

In either scenario, opposition from current and recent fishers should be reduced if all quota claims can be accommodated. This seems to have been the situation for ocean quahogs: the TAC was never met for ocean quahogs since its inception in 1977²⁵⁸ and the Ocean Quahog fishery was not perceived to be a troubled fishery during the debate in the 1980s that led to the implementation of the IFQ program.²⁵⁹

Similarly, fisheries with little fishing history have fewer interested parties demanding maintenance of the status quo or increased resources; additionally, with the shorter the period of time that fishing has occurred, those claims have less validity. Fishers had only exploited the wreckfish fishery for five years prior to the implementation of the IFQ program,²⁶⁰ and allocation of the quota was less contentious.²⁶¹ An interpretation under Raymond's theory might posit that less work had been performed historically, hence expectations, based on Lockean norms of property based on effort, were reduced.

Other "easy" fisheries may be those in close (or overlapping) physical proximity with existing successful IFQ programs. If the sablefish and halibut IFQ programs continue to be viewed as successful,²⁶² implementation of IFQs in other fisheries controlled

²⁵⁸ COMM. TO REVIEW INDIVIDUAL FISHING QUOTAS, *supra* note 10, at 282.

²⁵⁹ *Id.* at 288.

²⁶⁰ *Id.* at 66.

²⁶¹ Gauvin, *supra* note 186, at 95 (noting that because the wreckfish fishery had existed for only a brief time, problems posed by data limitations were small relative to other fisheries that had developed ITQs, and that no legal challenge was ever made to the initial allocation system or the application process itself).

²⁶² See generally USCOP, *supra* note 7, at 253 ("Halibut and sablefish fisherman, previously skeptical, are now among the [IFQ's] biggest supporters.")

by the North Pacific Regional Fishery Management Council may benefit from positive impressions of these IFQ programs.²⁶³ The regional fishery management councils may experience economies of scale in monitoring physically linked IFQ fisheries and may have the benefit of experience from prior IFQs to help avoid mistakes when implementing additional IFQs. Additionally, fisheries that are economically linked to fisheries with existing IFQs (for example through substitutability of the fish or the fishing fleet or competition for common sales markets) may also be easier to implement.²⁶⁴ By implementing multiple IFQs and allocating quota shares as early as possible,²⁶⁵ IFQ programs and allocation, on whatever basis, become more widely accepted and a precedential legal norm.²⁶⁶

There are currently over 900 federal fisheries, many of them minor and two-thirds of them with unknown biological profiles.²⁶⁷ Only six have an IFQ program.²⁶⁸ For IFQs and allocations in any form to be accepted more easily, more similar programs need to be created. If “easy” IFQs can be implemented, the development of the “IFQ norm” will help reduce resistance to closed-access IFQs and their allocations in the future. According to Libecap’s theory that background norms are important in the negotiations for

²⁶³ The NPFMC is implementing a new IFQ program for the crab fisheries in federal waters off Alaska. NOAA Fisheries, *Bering Sea and Aleutian Islands Crab Rationalization Program Overview*, at <http://www.fakr.noaa.gov/sustainablefisheries/crab/crfaq.htm> (last updated June 29, 2005).

²⁶⁴ It may also be desirable to implement IFQs on overlapping species in a fishery, to prevent the excess fishing effort from being diverted to the stocks without an IFQ. Diane P. Dupont & R. Quentin Grafton, *Multi-Species Individual Transferable Quotas: The Scotia-Fundy Mobile Gear Groundfishery*, 15 MARINE RESOURCE ECON. 205, 218–19 (2001). The U.S. halibut and sablefish IFQ programs themselves may be examples of economic linkage, in that they were preceded by IFQ programs for the same fish in the Canadian Pacific fisheries. Wyman, *supra* note 109, at 173–74.

²⁶⁵ Implementing IFQs early and quickly is also important for preventing a race for quotas, where fishers increase fishing effort in the expectation of receiving greater quota share allocation if they increase fishing now in order to increase their fishing history. MARINE FISH CONSERVATION NETWORK, *supra* note 240, at 12 (describing “fishing for quota”).

²⁶⁶ See Tietenberg, *supra* note 4, at 216 (“[I]t does appear that the introduction of new tradable permit programs becomes easier with familiarity.”).

²⁶⁷ See PEW OCEANS COMM’N, *supra* note 228, at 37 fig.1. Minor stocks are those with landings of less than 200,000 pounds. See *id.*

²⁶⁸ Wyman, *supra* note 109, at 167 (finding only six IFQs and five other IFQ-like fishery management plans in U.S. federal coastal fisheries).

creating new rights regimes, development of this “IFQ norm” will make future allocations easier to implement.²⁶⁹

CONCLUSION

IFQs provide the opportunity for rational capital allocation in a fishery and decrease the negative effects, such as lost gear, ghost fishing, unsafe fishing, and short seasons, which have become associated with input controls. Implementation of an IFQ program depends on current fishery participants’ acceptance of the new allocation of fishing privileges. IFQs are more acceptable to fisheries participants if they create opportunities for increasing financial returns for all participants as compared to credible expected future returns under the current property regime. Correspondingly, “losers” in the IFQ allocation, such as laborers and on-shore processors or other members of the “fishing community” that are excluded from an allocation and also are harmed by the new system, should be provided a compensating side-payment. Future successful IFQs, including multi-species IFQ programs,²⁷⁰ will be built on past successes and dependent on a fishing culture where IFQs are an accepted norm.

²⁶⁹ See *supra* text accompanying note 105.

²⁷⁰ See Dupont & Grafton, *supra* note 264.