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# Ecosystem Management and the 1996 Sustainable Fisheries Act

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# Ecosystem Management and the 1996 Sustainable Fisheries Act

*Shi-Ling Hsu\* and James E. Wilen\*\**

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## INTRODUCTION

Many observers have hailed the 1996 Sustainable Fisheries Act (SFA), reauthorizing and amending the 1976 Magnuson Fishery Conservation and Management Act (FCMA or Magnuson Act), as a victory for conservation and ecosystem preservation. New provisions include the removal of discretion over the definition of overfishing, new requirements to reduce bycatch and waste, and provisions protecting essential habitat for fisheries systems. However, because the SFA imposes a moratorium prohibiting the implementation of new individual quota systems until the year 2000, it is presently ineffective in curing perceived problems in fisheries management. By blocking the implementation of new quota programs, the Sustainable Fisheries Act not only fails to address the overcapitalization problem, but actually provides perverse incentives to exacerbate the problem. These incentives may cause fishermen to strive to accumulate harvest records during the moratorium to ensure their ability to participate in future quota programs. Such strategic behavior will only accelerate overfishing problems, reducing or offsetting some of the positive benefits of other conservation provisions in the Act.

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## I

BACKGROUND: THE 1976 MAGNUSON FISHERY  
CONSERVATION AND MANAGEMENT ACT

Most of the world's valuable fisheries are located within a narrow band of the coastlines, either on the shallow shelf areas or in nutrient-rich upwelling zones. In 1976, when Congress passed the Magnuson Act,<sup>1</sup> the bulk of the area containing these fisheries lay beyond the twelve mile jurisdictions of most nations, and as a result few fisheries were actively managed.<sup>2</sup> This condition did not change until the passage of the Law of the Sea Convention in 1982,<sup>3</sup> which dramatically changed the structure of fisheries by extending national jurisdiction to 200 nautical miles, thereby setting up the legal preconditions to exclude foreign fleets, control domestic fishing, and sustainably manage the fisheries. However, legal preconditions alone are not sufficient conditions for effective management; the twenty years that have elapsed since the extension of jurisdiction have not produced as many conservation success stories as expected. A report in 1991 assessing the status of marine resources within the U.S. Exclusive Economic Zone found fishing yields about thirty percent below their estimated long-term potential.<sup>4</sup> The report also concluded that utilization rates for at least twenty-eight percent of the fish groups were excessive, and that there was insufficient information to make a judgment about the health of another thirty-four percent of the fish groups.<sup>5</sup>

Why such a lackluster report card after fifteen years? The structure of the 1976 FCMA, the enabling legislation set up to manage U.S. fisheries after the extension of jurisdiction, is at least partially to blame. The FCMA reflects considerable interplay between disparate interests; in the end, it was a compromised instrument. Fishermen almost universally resist regulation of virtually any kind, regardless of whether it appears to be in their best interests. In 1976, however, when Congress was debating the FCMA, the industry sought to supplant the foreign fleets that, beginning in the 1960s, had emerged in

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1. 16 U.S.C. §§ 1801-1882 (1997).

2. Exceptions seem to be those fisheries whose habitats or migration routes were nearshore within coastal jurisdictions (lobster, salmon) or a few straddling stocks for which bilateral agreements to manage had been worked out (North Pacific halibut).

3. See *The United Nations Convention on the Law of the Sea*, 21 INT'L LEGAL MATERIALS 1261, 1280 (1982) (opened for signature Dec. 10, 1982), reprinted in *THE LAW OF THE SEA: UNITED NATIONS CONVENTION ON THE LAW OF THE SEA WITH INDEX AND FINAL ACT OF THE THIRD UNITED NATIONS CONFERENCE ON THE LAW OF THE SEA*, UN Sales No. E.83.V.5 (1983) [hereinafter *Law of the Sea*].

4. See NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, *OUR LIVING OCEANS: THE FIRST ANNUAL REPORT ON THE STATUS OF U.S. LIVING MARINE RESOURCES* 7-8 (1991).

5. See *id.* at 16.

large numbers off the U.S. coasts.<sup>6</sup> The significant compromise that produced the 1976 FCMA forced the fishing industry to accept a federally structured fisheries management system in return for federal loan guarantees and subsidies, which the government offered to accelerate elimination of foreign fleets from the newly created territorial waters. Over the next several years, a small number of prescient fishermen became very wealthy both by establishing claims over the newly available offshore fisheries, and by doing it with federally subsidized vessels. While the industry ultimately accepted the Faustian bargain of a new regulatory structure, it also managed to gain control of the resulting legislative apparatus.

One of the more far-reaching and, in hindsight, troublesome provisions of the FCMA was the institutionalization of management objectives different from the traditional, and largely biological, focus on maximum *physical* yield.<sup>7</sup> A key phrase that appears in the opening sections of the FCMA states that one of the Act's purposes is:

to provide for the preparation and implementation, in accordance with the national standards, of fishery management plans which will achieve and maintain, on a continuing basis, the optimum yield from each fishery by the United States fishing industry;<sup>8</sup>

The importance of this phrase lies in its directive to manage fisheries in order to achieve *optimum* yield. However, the Act does not define "optimum yield."

During the Senate-floor debates, the Act's framers acknowledged that optimum yield was broadly defined, and stated that they intended the concept to evolve and crystallize as management plan experience mounted.

Mr. WALSH. [Optimum yield] is the amount of fish that is prescribed as such on the basis of maximum sustainable yield. That is, the biological standard is the benchmark from which we move one way or the other, on the basis of any relevant economic, social, or ecological factor.

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6. The Law of the Sea Convention contained agreements to ease the transitional impacts on foreign fleets. These provisions allowed foreign fleets to continue to harvest off foreign coastlines until domestic fleets had developed enough capacity to fully utilize the fish stocks. See *Law of the Sea*, *supra* note 3, at 1281.

7. Maximum sustainable yield is a construct referring to the largest amount of annual harvest that a fishery can sustain over a period of time. Generally, a certain population level lower than the population level that would emerge without harvesting is associated with maximum sustainable yield. Managing to produce maximum sustainable yield thus requires reducing the population size to the level associated with maximum sustainable yield, and maintaining it at that level by controlling annual harvest levels. See Christopher Stone, *Too Many Fishing Boats, Too Few Fish: Can Trade Laws Trim Subsidies and Restore the Balance in Global Fisheries?*, 24 *ECOLOGY* L.Q. 505, 538.

8. 16 U.S.C. § 1801(b)(4) (1997).

Mr. Chairman, optimum yield may mean something different in every fishery. We have as yet to come up with a complete and overriding definition of what "optimum yield" is. What we have preferred to do is let this concept develop over time through an accumulation of various decisions, while trying to maintain an overall consistency, and at the same time, trying to define better the various elements of optimum yield.<sup>9</sup>

Thus, from the outset the Magnuson Act's potential effectiveness as a conservation document was hampered because its framers failed to define the Act's primary conservation objective. In addition, while biologists who would staff the scientific arms of the regional management councils could certainly understand "maximum sustainable yield," few knew how to modify that concept to produce an "optimum yield" from fish stocks.<sup>10</sup>

A second important feature of the FCMA was the establishment of regional management councils, composed of senior management agency personnel from each of the respective region's states, scientists, and representatives from fishermen and citizen groups, all supported by scientific staff. The Councils' responsibilities were to draw up management plans, assess the impacts of the various options, present them to the industry and public for comment, and then recommend specific measures to the Secretary of Commerce. From the industry's point of view, this structure provided a decentralized system in which they could have substantial input. From the point of view of Congress and the Executive, this process allowed for federal oversight and control through budget appropriations and bureaucratic checks. As a result of this system, the U.S. fisheries policy is decentralized and largely at the discretion of the regional councils.

The key to the actual management process is the management plan. In order to comply with the FCMA, management plans must be consistent with so-called "national standards." The standards in the Magnuson Act of 1976 include:

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9. *Fishery Conservation and Management Act Oversight: Hearings on Oversight of the FCMA and S. 3050 Before the Senate Comm. on Commerce, Science, and Transp.*, 95th Cong. 15-16 (1978) (statement of James P. Walsh, Deputy Administrator, NOAA).

10. The substitution of optimum yield for maximum sustainable yield was due mainly to the influence of economists, who argued that the level of catch which provided the largest *physical* yield might not be the same as the level that provided the largest net benefits to the nation. Interestingly, most economic analysis suggested that a larger biomass than the one yielding maximum physical yield would generate more net benefits, since average fishing costs in most fisheries decline with larger biomass levels. Thus the biological goal of ensuring a safe and reasonably large biomass level was actually complementary with the economic goal of maximizing net benefits in most cases. Perhaps unfortunately, however, most scientific staff responsible for actually managing fisheries were biologists and not economists. Moreover, even though economists in principle knew how to determine net economic benefits, they did not provide much practical guidance to the individuals who were left to implement the policy at the field level.

- i. Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.
- ii. Conservation and management measures shall be based upon the best scientific information available.
- iii. To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.
- iv. Conservation and management measures shall not discriminate among residents of different States. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be: (1) fair and equitable to all such fishermen; (2) reasonably calculated to promote conservation; and (3) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.
- v. Conservation and management measures shall, where practicable, promote efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.
- vi. Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.
- vii. Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.<sup>11</sup>

Clearly, many of these standards provide directives that are consistent with broad conservation goals and sensible ecosystem management. On closer examination, however, most of these directives contain either contingencies or escape hatches, or are not particularly operational in the first place. Standard (i), for example, repeats some of the vague language contained in the Act itself without providing operational guidance. Attempts at more precise articulations have failed to clarify the standards. Councils were directed to interpret optimum yield as “the amount of fish which will provide the greatest overall benefit to the Nation, . . . ; is prescribed on the basis of maximum sustainable yield from the fishery, as reduced by any relevant social, economic, or ecological factor . . . .”<sup>12</sup>

The record of fisheries conservation in the U.S. since the FCMA is checkered. In some regions, councils have been able to insulate the scientific determination of optimum yield from the intensely acrimonious decisions about which groups using what kinds of gear should catch the fish. In other regions, however, councils have not overcome industry pressures to increase harvest targets, sometimes justified by

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11. 16 U.S.C. § 1851(a)(1)-(7) (1997).

12. 16 U.S.C. § 1802(28)(A)-(B) (1997).

directives that weaken the mandate to set clear biological targets with vague admonitions to consider economic or social factors. In some regions, managers have been unable even to gather rudimentary data necessary to begin managing fisheries, such as landings records. While much of the special interest interference has emerged at the regional levels, some of it has been exercised at the federal level. For example, in the early 1980s, when the North Pacific halibut fishery's fleet was so large that the season could only last five days, the North Pacific Fishery Management Council proposed a limited entry plan to freeze the fleet and prevent growth that might further endanger the ability of managers to control harvests.<sup>13</sup> The Secretary of Commerce under the Reagan administration disapproved the plan because it ran counter to free market principles. As Reagan aides explained, "[a]s an Administration, we're just opposed to limiting fishing to only those who have formerly fished . . . . We are concerned that it would interfere with basic economic liberties."<sup>14</sup>

This example highlights one of the most significant failures of fisheries conservation under the FCMA: the failure to contain entry and capacity growth in fisheries. As economists have warned for forty years, fishing capacity in open access fisheries tends to be directly proportional to their profitability.<sup>15</sup> If no authority regulates the fish stocks, too many vessels end up chasing too few fish, which can lead to a complete collapse of the fishery. Regulators may be able to maintain a healthy biomass by employing management measures like shortened seasons to limit harvests to sustainable levels. However, because such measures encourage overcapitalization, as in the halibut case where the whole fleet geared up to fish a five day season, they create significant economic waste. The original FCMA avoided addressing the inevitability of overcapitalization and left this responsibility to the regional councils, where political pressures to leave fisheries open to all entrants were most strongly expressed. As a result of this, most of the fisheries in the U.S. are vastly overcapitalized. Short seasons govern even those in good shape biologically, leading to relatively poorer quality fish, and encouraging fishing with methods that emphasize volume and induce bycatch, discarding, and other forms of waste.

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13. See John Balzar, *A Catch as Catch Can Fish Plan*, L.A. TIMES, June 28, 1992, at A1.

14. *Id.*

15. See, e.g., H. Scott Gordon, *The Economic Theory of a Common-Property Resource: The Fishery*, 62 J. POL. ECON. 124, 129 (1954).

## II

## THE 1996 SUSTAINABLE FISHERIES ACT

The 1996 Sustainable Fisheries Act (the "SFA"),<sup>16</sup> which amended the 1976 Magnuson Act, reflects another step in fine tuning the fisheries regulatory apparatus established under the original act. At the same time, the SFA, like the original act, is clearly the outcome of political logrolling, tradeoffs, and compromises among disparate groups with different agendas. The policy impacts, achieved by a negotiation process that included input from conservation organizations and fishing industry representatives, are by no means inconsequential, but they should not be taken for a systemic overhaul of fisheries management.

Stamps of conservation groups are imprinted upon numerous provisions of the SFA. Perhaps the most significant change the SFA effected is the removal of some discretion regarding "overfished" fisheries. If the Secretary of Commerce (the "Secretary") determines that a fishery is "overfished,"<sup>17</sup> she is required to immediately notify the appropriate regional fishery management council, and give the council one year to develop a fishery management plan that ends overfishing and rebuilds the stock of fish.<sup>18</sup> If the regional council fails to develop a plan within one year, the Secretary is required to prepare a plan within nine months.<sup>19</sup> The plan to end overfishing must do so within a time frame that is "as short as possible, taking into account the status and biology of any overfished stock of fish . . . and the interaction of the overfished stock of fish within the marine ecosystem," but must generally be accomplished in less than ten years.<sup>20</sup> The regional council developing the fishery management plan is still responsible for specifying "objective and measurable criteria for identifying when the fishery . . . is overfished."<sup>21</sup>

The SFA also establishes new requirements regarding bycatch—fish that fishermen catch incidentally when fishing for another species. Fishery management plans under the SFA must be consistent not only

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16. Pub. L. No. 104-297, 110 Stat. 3559 (1996) (amending Magnuson Fishery Conservation and Management Act, 16 U.S.C. § 1801-1882 (1976)).

17. "Overfished" is a rate of fishing mortality that jeopardizes the capacity of a fishery to produce the maximum sustainable yield on a continuing basis. See § 102(8), 110 Stat. 3559, 3562. "Maximum Sustainable Yield" is the largest average annual catch or yield that can be taken over a significant period of time from each stock under prevailing ecological and environmental conditions. See 50 C.F.R. § 602.11(d). Approaching a condition of being "overfished" means that "based on trends in fishing effort, fishery resource size, and other appropriate factors," it will be "overfished" in two years. §109(e)(1), 110 Stat. at 3584 (amending 16 U.S.C. 1854(e)).

18. See § 109(e)(1)-(3), 110 Stat. at 3584 (amending 18 U.S.C. §1854(e)).

19. See § 109(e)(5), 110 Stat. at 3585 (amending 18 U.S.C. § 1854(e)).

20. § 109(e)(4), 110 Stat. at 3584-85 (amending 18 U.S.C. § 1854(e)).

21. *Id.*



with the seven national standards described above, but also with the three additional ones specified by the SFA, including one that requires plans to minimize bycatch or minimize the mortality from bycatch.<sup>22</sup> Further, the first national standard, mandating that management achieve the "optimum yield" from each fishery, previously defined as "maximum sustainable yield . . . as modified by any relevant economic, social, or ecological factor" (emphasis added), has been altered to allow only that maximum yield be reduced by any such relevant factors.<sup>23</sup> This prevents councils from raising allowable harvests in response to local pressure for larger allocations.

The SFA also sets forth new provisions requiring the identification of "essential fish habitat"<sup>24</sup> within a timetable to be developed by the Secretary.<sup>25</sup> Fishery management plans must identify and describe essential fish habitat, and "minimize to the extent practicable adverse effects upon such habitat . . . and identify other actions to encourage the conservation and enhancement of such habitat."<sup>26</sup> The Secretary must coordinate with and review the actions of other federal agencies that take any action, or authorize or fund any action that may adversely affect any essential fish habitat, and recommend measures to further the conservation of the essential fish habitat.<sup>27</sup> The state or federal agency is then required to provide the Secretary with a response within thirty days, which must include an explanation if the agency does not follow the Secretary's recommendations.<sup>28</sup>

### III

#### THE OVERCAPITALIZATION PROBLEM

While the SFA contains some notable conservation advances, it does little to address the most fundamental cause of overfishing and waste—the chronic overcapitalization of fishing industries.<sup>29</sup> The

22. See §106(b), 110 Stat. at 3570 (amending 16 U.S.C. § 1851(a)).

23. § 102(7), 110 Stat. at 3562 (amending 16 U.S.C. § 1802(28)).

24. "Essential fish habitat" are waters in which fish spawn, breed or develop to maturity. See § 102(3), 110 Stat. at 3561 (amending 16 U.S.C. § 1802(10)).

25. See § 110(a)(3), 110 Stat. at 3588 (amending 16 U.S.C. § 1855).

26. § 108(a)(3), 110 Stat. at 3574 (amending 16 U.S.C. §1853(a)(7)).

27. See § 110(a)(3), 110 Stat. 3588-89 (amending 16 U.S.C. § 1855).

28. See *id.*

29. The SFA authorizes fishing boat buyback programs designed to remove excess fishing capital under certain conditions. The buyback program must be consistent with existing management plans, must be cost-effective, and "necessary to prevent or end overfishing, rebuild stocks of fish, or achieve . . . improvement in the conservation and management of the fishery." § 116(a), 110 Stat. at 3600 (amending 16 U.S.C. § 1861a). Such management plans must also contain provisions to prevent the replacement of the bought vessel, and must have set catch levels that trigger fishery closures or catch reductions. See § 116(a), 110 Stat. at 3601 (amending 16 U.S.C. § 1861a). It is not clear how much use will be made of this provision; buyback programs have not been tried much in practice.

technological resourcefulness of fishermen has historically made a mockery of the most stringent and carefully crafted command and control regulations aimed at reducing fishing effort. For example, reductions in season lengths have encouraged fishermen to build bigger, faster vessels with more short-term harvesting capacity, necessitating further reductions in season lengths.<sup>30</sup> Limitations or restrictions on gear types or capacity (e.g., net size regulations) have invited substitution of other inputs that partially thwart the regulations' original purpose, leading to further attempts by regulators to contain fishing technology's impact on overall harvest levels. Even in cases where limited entry programs have been instituted to freeze capacity and prevent further entry by new boats, there has been a need for additional measures to control capacity as fishermen have continued to increase individual vessel capacity on existing boats. In fact, measures that constrain fishing capital growth by fiat focus only on the symptom of the problem and not on the cause, which is the open access nature of the resource.<sup>31</sup>

A few fisheries have adopted a measure that attacks the fundamental property rights problem: individual fishermen quotas (IFQs).<sup>32</sup> IFQs grant rights to harvest a given percentage of the biologically determined total annual allowable catch. They are, in effect, a property right to the potential harvest. As a result, they change the incentives fishermen face in a radical way. Under IFQs, a fisherman does not need to build a bigger boat to outfish his competitors before regulators close the season; he may fish whenever it is efficient to do so during the season. While IFQs have only been adopted in three fisheries in the U.S., they have been adopted in over fifty fisheries worldwide.<sup>33</sup>

The impacts of IFQs on fisheries are a remarkable counterpoint to the status quo in traditional fisheries managed by closed seasons and gear restrictions. IFQs have reversed the race to overcapitalize, because they encourage fishermen to downsize and adopt fishing practices more suitable to producing higher valued products year-round. Reduced overcapitalization offers many benefits. First, the product itself improves, as fish formerly frozen because of short seasons are

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30. See discussion *supra* Part I.

31. See generally James E. Wilen, *Rent Generation in Limited Entry Fisheries*, in RIGHTS BASED FISHING 258-59 (Philip A. Neher et. al., eds., 1989).

32. For a more complete discussion of IFQ's, see Alison Rieser, *Property Rights and Ecosystem Management in U.S. Fisheries: Contracting for the Commons*, 24 *ECOLOGY L.Q.* (1997) (this issue).

33. The U.S. fisheries with IFQs are the surf clam/quahog fishery in the Mid Atlantic Region, the wreckfish and red snapper fisheries off the South Atlantic, and the North Pacific halibut and sablefish fisheries off Alaska. See 50 C.F.R. §§ 622.15-.16, 648.70-.75, 679.40-.44 (1996).

available fresh throughout the year. Second, fishermen begin to act as stakeholders of the resource, since detrimental actions more clearly impact their own potential revenues. This is an important byproduct since fishermen and regulators tend to view most modern regulated fisheries as an adversarial struggle.<sup>34</sup> Finally, in fisheries where there were formerly significant amounts of bycatch and discards, fishermen reduce waste, particularly if bycatch is included in their quota.<sup>35</sup>

Support for IFQs is by no means universal, however, and there are many detractors who point to potential problems. While IFQ programs can theoretically deliver substantial ecological and economic benefits, they will almost certainly have distributional consequences. In systems where quota shares are transferable, the most efficient fishermen will bid up prices and purchase the quota shares. These more efficient fishermen will also probably hire fewer crewmen, resulting in a decrease in numbers employed.<sup>36</sup> In regions that are heavily dependent upon the fishing industries, like remote areas of Alaska, IFQ programs could potentially impact not only working crewmen, but also persons supported by secondary industries associated with fishing.<sup>37</sup> Moreover, the prospect of larger, more efficient operations—some of which are corporate entities like Tyson Foods or Con-Agra Corporation—capturing a large percentage of quota shares is an outcome that most local residents of fishing communities and some managers wish to prevent in order to save smaller family fishing operations.<sup>38</sup> Opponents of IFQs also fear that smaller fishing operations may receive too small of an initial allocation of quota shares to be able to fish economically, and yet will be outbid by larger entities in their attempts to buy more quota shares. In addition, smaller operations tend to have less access to credit for buying quota shares than larger operations.

Provincialism also creates opposition to IFQs. Programs that risk transferring fishing rights on a permanent basis to “outsiders” predict-

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34. See, e.g., Philip Major, *Individual Transferable Quotas and Quota Management Systems: A Perspective from the New Zealand Experience*, in *LIMITING ACCESS TO MARINE FISHERIES: KEEPING THE FOCUS ON CONSERVATION* 98, 101-02 (Karyn L. Gimbel, ed., 1994); Bruce R. Turriss, *Canada's Pacific Halibut Fishery: A Case Study of an Individual Quota Fishery*, in *LIMITING ACCESS TO MARINE FISHERIES: KEEPING THE FOCUS ON CONSERVATION* 132, 144 (Karyn L. Gimbel ed., 1994).

35. See Major, *supra* note 30; Turriss, *supra* note 30.

36. Cf. K.E. Casey, et al., *The Effects of Individual Vessel Quotas in the British Columbia Halibut Fishery*, 10 *MARINE RESOURCE ECON.* 211, 225 (1996). Casey et. al. report fewer crew members per vessel, consolidation and a reduction in numbers of vessels, with these employment losses offset by remaining crew members working longer seasons.

37. Interestingly, in the recent adoption of IFQs in the Alaskan halibut fishery, this concern was addressed by establishing what are called “community development quotas”. These are essentially quota allocations made to communities in remote areas rather than individuals per se.

38. See Douglas Frantz, *How Tyson Became the Chicken King*, *N.Y. TIMES*, Feb. 28, 1994, § 3, at 1.

ably evoke strong reactions from local fishermen. However, because IFQ programs create a valuable property right that can be sold by those choosing to sell out, substantial numbers of fishermen are inclined to support IFQs. Some fishermen have also supported IFQs because they see them as the only way to manage fisheries effectively and avoid the inevitable growth in fishing capacity that occurs under open access. Intra-cultural and intra-community conflicts over the use of IFQs have often become pointed.<sup>39</sup>

Environmental groups are also deeply split over whether to support IFQ programs. Organizations such as the Environmental Defense Fund have come out with qualified support of IFQ programs. However, Green Peace not only opposed them but led a campaign against IFQs.<sup>40</sup> It advocates keeping fisheries in the hands of small entrepreneurs, and is concerned about discards and "highgrading." Highgrading refers to the possibility that quota holders will discard small or otherwise less valuable fish, since the incentive exists to fill their quota with only the highest valued fish.

While the potential problems and downside risks are a cause for concern, some of them can be (and have been) addressed through careful system design. For example, the risk of concentrating quota shares in the hands of a few can be countered with ownership caps and/or transfer restrictions. Highgrading and bycatch problems can also be mitigated through incentive programs, observer/enforcement programs, gear restrictions, etc. While critics still raise the same issues they did twenty years ago, before any IFQs were in place, there is now enough real experience with IFQs around the world to resolve some of these doubts and to move discussion off the hypothetical plane.

On balance, then, conservation interests would have been best served during the reauthorization debate if more attention had been paid to the overcapitalization problem, including measures that might encourage experimentation with innovative new methods like IFQs. Instead, a rather remarkable set of provisions was inserted into the Reauthorization Act, which not only fails to encourage such policy experiments but actually *prohibits* them. In particular, the SFA states "[a] Council may not submit and the Secretary may not approve or implement before October 1, 2000, any fishery management plan, plan amendment, or regulation under this Act which creates a new individual fishing quota plan."<sup>41</sup>

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39. See Brad Matsen, *Council gives nod to blackcod and halibut IFQs*, NATIONAL FISHERMAN, Feb. 1992, at 22.

40. See, e.g., JED GREER, GREENPEACE, *THE BIG BUSINESS TAKEOVER OF US FISHERIES: PRIVATIZING THE OCEANS THROUGH INDIVIDUAL TRANSFERABLE QUOTAS* (1995).

41. Sustainable Fisheries Act, Pub. L. No. 104-297, § 108(e), 110 Stat. 3559, 3576 (1996) (amending 16 U.S.C. § 1853(d) and repealing 16 U.S.C. § 1853(e)-(f)).

How did this proviso end up in the SFA? While critics have raised legitimate questions and reservations on many fronts, the answer in this case involves the machinations of Northwest Pacific fisheries politics. The perennial battle between Alaskans and out-of-state industry interests over the rich fishery resources off Alaska is chiefly responsible for the proviso. Alaskans view the resources off the Gulf of Alaska and in the Bering Sea as "Alaskan" resources, while the mostly large factory trawler vessels (predominantly from Washington State) just as indignantly view them as national resources. Federal law supports out-of-state interests: the national standards state that "[c]onservation and management measures shall not discriminate between residents of different States."<sup>42</sup> The "local vs. outsider" tussle over these resources has nevertheless played itself out countless times in Northwest Pacific regional fisheries politics and the IFQ ban in the SFA reflects a spillover of the issues into federal fisheries policy.

The impetus for this moratorium is best understood by recognizing that all limited entry plans or IFQ plans must determine a "fair" way to allocate initial shares of the resource. Virtually all programs have set up criteria that utilize catch records over some period in the past, often augmented by other factors, such as the amount of investment in the vessel, the fraction of the fisherman's income from fishing, etc. In any case, the initial allocation a particular fisherman receives through an IFQ program depends significantly upon his past participation. In Alaska, several fisheries are on the brink of adopting some form of limited entry, ranging from a simple license limitation scheme to a more complicated IFQ scheme. The moratorium on new programs gives Alaska residents a four year window within which to accumulate catch records to position themselves favorably vis-a-vis "outsiders." According to the Alaskan Congressional delegation, this is the most important reason for the delay it engineered with the unwitting support of numerous well-intentioned environmental groups.

The delay is also a call for an individual fishing quota report. It requires the National Academy of Sciences, in consultation with the Secretary of Commerce and the Regional Fishery Management Councils, to submit to the Congress a comprehensive final report on IFQs no later than October 1, 1998.<sup>43</sup> As the National Academy panel studies IFQs and compares them with other methods of containing overcapitalization, Alaskan fishermen will simultaneously be scrambling to accumulate catch records. This will lead to a far more dramatic incidence of overcapitalization in Alaska that will have to be dealt with after the year 2000. In the interim, managers in both Alaska and the

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42. 16 U.S.C. § 1851(a)(4) (1997).

43. See § 207(a), 110 Stat. 3612 (amending 16 U.S.C. § 1882).

rest of the U.S. will continue to struggle with the overcapitalization problem that the Sustainable Fisheries Act of 1996 both sidestepped and exacerbated.

