Alternative Visions for Fisheries Governance

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Which is Supreme, the Individual or her Community?

Government has no other end, but the preservation of property.

... ask not what your country can do for you—ask what you can do for your country.

John Locke

John Kennedy

Are fishermen endowed with an unalienable right to kill and dispose of fish or are those rights subordinated to the rights of their community?
At the heart of debates over the consequences of alternative governance structures in fisheries is an ageless dispute regarding the relative supremacy of the rights of individuals and those of the societies in which they reside: are fishermen endowed with an unalienable right to dispose of their catches or are those rights circumscribed by the rights of fishery-dependent communities? This dispute has been sharpened by the emergence of governance regimes that limit entry and even more so by the emergence of governance regimes that create individual or collective rights to options to harvest dedicated shares of a fish stock. The choice of governance structures affects the preeminence of individual liberty or social contracts and in turn affects the magnitude and distribution of benefits.
How to Crash a Socio-Ecological System

Fail to solve the common-pool resource dilemma

• Ignorance—Failure to understand limits of biophysical system.
• Incompetence—Failure to stay within those limits.
• Ineptitude—Failure to prevent a race to render into possession through capture.
How to Crash a Socio-Ecological System

Fail to recognize or adapt to nonstationarities, e.g.,

• Environmental/ecological change
• Population/demographic change
• Technological change
• Changes in social preferences
• Changes in input and output prices
How to Crash a Socio-Ecological System

Socio-ecological systems can fail irreversibly when subjected to shocks—one-off perturbations—that exceed critical biophysical, social, or economic thresholds
Whose Fish?

- Common law
- Individual rights
- Federal constitution, statutes, and regulations
- Tribal laws and ordinances
- International treaties
- Multi-state compacts
- State constitution, statutes, and regulations
Whose Fish?
Property Law

Defines how entitlements and liabilities are distributed between individuals, groups, and government.

Basis for fisheries governance regimes: open-access, regulated access, common property, territorial use rights, limited access privileges, cooperatives, individual fishing quotas, sole ownership, etc.

Fishing, like all other economic activities, is “rights-based”; fisheries differ in who holds what rights.
Property—Bundles of Entitlements and Obligations

- Right to possess
- Right to use
- Right to manage
- Right to income
- Right to capital
- Right to security

- Right to alienate
- Right to determine succession
- Right of duration
- Prohibition of harmful use
- Liability to execution

Entitlements can be attenuated in any combination of dimensions

Honoré (1961)
Limits a government’s ability to alienate public trust resources

A public trust interest is:

a title held in trust for the people of the States that they may enjoy the navigation of the waters, carry on commerce over them, and have liberty of fishing therein freed from the obstruction or interference of private parties. …

The State can no more abdicate its trust over property in which the whole people are interested, like navigable waters and the soils under them, so as to leave them entirely under the use and control of private parties than it can abdicate its police powers in the administration of government and the preservation of the peace.

(Illinois Central R.R. Co. v. Illinois 1892)
Public Trust Doctrine

Does not prohibit alienation of navigable waterways, submerged lands, or living aquatic resources; it suggests that alienation is permissible when the public interest or public use is improved thereby or when alienation does not substantially impair the public interest or the use of remaining resources.

(NRC 1999, Simmons 2007)

When the right to harvest fishery resources is conveyed to individuals, the government typically retains a trust responsibility for safeguarding the sustainability of those resources.

(McCay 1998, NRC 1999)
Authority to control the use of federal lands and associated resources, including fugitive resources and actions on non-federal lands that impinge on federal resources.

Article 4, Section 3

Authority over any activity that could potentially affect interstate commerce, e.g., transport of fish across state boundaries or from federal waters.

Article 1, Section 8

Authority to enact treaties.

Article 2, Section 2
US Constitution

State authority to control the use of state lands and associated resources, including fugitive resources and actions on private lands that impinge on state resources.

Interstate compacts are delegations of state authority. Compacts can be formed from bottom-up (e.g., ASMFC) or from top down (e.g., regional FMCs).

Tribes are dependent sovereigns with authority to regulate resources on tribal lands and to consult with the federal government regarding resource uses off tribal lands that might impact tribal resources.
Individual rights include:

States are prohibited from discriminating against citizens of other states. While nonresidents may be charged higher fees for access to resources, fee differentials must reflect real differences in costs.

Article 4, Section 2

Private ownership interests are protected from uncompensated takings once those interests have been established, for example, through capture.

Amendment V
Alaska State Constitution

Wherever occurring in their natural state, fish, wildlife, and waters are reserved to the people for common use.

Article VIII, Section 3

Fish, forests, wildlife, grasslands, and all other replenishable resources belonging to the State shall be utilized, developed, and maintained on the sustained yield principle, subject to preferences among beneficial uses.

Article VIII, Section 4

No exclusive right or special privilege of fishery shall be created or authorized in the natural waters of the State. This section does not restrict the power of the State to limit entry into any fishery for purposes of resource conservation, to prevent economic distress among fishermen and those dependent upon them for a livelihood and to promote the efficient development of aquaculture in the State.

Article VIII, Section 15
Federal Statutes and Regulations

Apply from 3-200nm

- FCMA (MSFCMA)—1976
- NEPA—1969
- ESA—1966
- MMPA—1972
- EO 12291—1981
- EO 12866—1993
- Miscellaneous
  - APA (1946); RFA (1980); DQA (2001); CZMA (1972); EO 13175 (2000); EO 12898 (1994); AFA (1998)
State Law and Regulation

Apply from 0-3nm

Use of fishery resources within states is governed under state constitutions, statutes, regulations, and common law precedents. These laws differ widely among the states. For example, Virginia law allows for submerged lands to be leased for oyster culture while Maryland law does not.
Magnuson-Stevens Fishery Conservation and Management Act

- The Secretary of Commerce promulgates implements, and enforces Fishery Management Plans.
- Eight regional Fishery Management Councils advise the Secretary on how to implement the Act for individual fisheries.
- The Secretary defers to the FMCs insofar as their FMPs meet requirements of the MSFCMA.
- The Secretary has the authority to implement “Secretarial plans” if an FMC fails to act.
- Section 301—National Standards—societal goals
- Section 303A—Rules for Limited Access Privileges
National Standards

1. 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.

2. Conservation and management measures shall be based upon the best scientific information available.

3. 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.

4. Conservation and management measures shall not discriminate between residents of different States. If it becomes necessary to allocate or assign fishing privileges among various USA fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.
National Standards

5. Conservation and management measures shall, where practicable, consider **efficiency in the utilization of fishery resources**; except that no such measure shall have economic allocation as its sole purpose.

6. Conservation and management measures shall take into account and **allow for variations among, and contingencies in**, fisheries, fishery resources, and catches.

7. Conservation and management measures shall, where practicable, **minimize costs and avoid unnecessary duplication**.

8. Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of paragraph (2), in order to (A) **provide for the sustained participation of such communities**, and (B) to the extent practicable, **minimize adverse economic impacts on such communities**.
9. Conservation and management measures shall, to the extent practicable, (A) **minimize bycatch** and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

10. Conservation and management measures shall, to the extent practicable, **promote the safety of human life at sea**.
The MSFCMA section 301 National Standards are inconsistent in suggesting that “Conservation and management measures shall not discriminate between residents of different States” and yet “take into account the importance of fishery resources to fishing communities … in order to (A) provide for the sustained participation of such communities …”
Rules for LAPs

- LAPs can be modified or revoked without compensation.
- LAPs are issued for 10 years or less, but can be renewed.
- LAPs are to be reviewed within 5 years of implementation and at least once every 7 years thereafter.
- Auctions are permitted for initial or subsequent allocations of LAPs.
- LAPs in New England and Gulf of Mexico regions must survive referenda.
Limited Access/Catch Shares in Alaska

- State Limited Entry Programs (1973-)
  - salmon, herring, crab, sablefish, shrimp, urchins, cucs, geoducks
- Super-Exclusive Registration (1994)
  - e.g., Norton Sound red king crab
  - pollock, other groundfish, prohibited species, halibut, and crab
- Halibut/Sablefish IFQ (1995)
- BSAI Pollock AFA Cooperatives (1999)
- Scallop License Limitation (2000)
- Crab IFQ/PQS (2005)
  - BB red, W/E AI golden, W AI red, Pribilofs blue/red, St. Matthew blue, BS snow, EBS/WBS Tanner
- AI Pollock Fishery—Aleut Corp (2005)
- GOA Rockfish “Pilot” Program (2005)
- BSAI—Amendment 80 (2008)
  - POP, Atka mackerel, flathead sole, P cod, rock sole, yellowfin sole
- Halibut Charter LLP (2010); Community Charter Halibut Permits (2011?)
International Fisheries Agreements

- Global Organizations & Instruments
  - UN General Assembly
  - UN FAO
- Regional Fisheries Management Organizations (RFMO)
- Bilateral Agreements
International Instruments

- UN Convention on Law of the Sea (UNCLOS)
- Agreement to Promote Compliance with International Conservation and Management Measures By Fishing Vessels on the High Seas
- Code of Conduct For Responsible Fisheries
- Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks Agreement
- International Plans of Action
- UNGA Resolution on High Seas Driftnet Fishing
Regional Fisheries Management Organizations (RFMO)
Central Bering Sea Pollock Convention
North Pacific Anadromous Fish Commission
Russian Maritime Boundary
Halibut Fishing off Alaska

- 1880: Commercial fishery begins
- 1923: Halibut Commission formed
- 1976: MSFCMA enacted
- 1982: Authority to allocate catch delegated to NPFMC
- 1991: Canada implements IVQs
- 1995: Alaska implements IFQs
Under the Halibut Convention, abundance steadily increased through the 1950s before declining in the 1960s and early 1970s. The stock decline was driven, in part, by foreign catches outside US and Canadian territorial seas. The stock was rebuilt in the wake of extended jurisdiction and catches rebounded.

**Halibut Fishing off Alaska—pre-IFQ**

- Under the Halibut Convention, abundance steadily increased through the 1950s before declining in the 1960s and early 1970s.
- The stock decline was driven, in part, by foreign catches outside US and Canadian territorial seas.
- The stock was rebuilt in the wake of extended jurisdiction and catches rebounded.
Recovery of the halibut stock and protection from foreign competition stimulated a rapid increase in the number of fishing vessels and led to shortened seasons.
Halibut Fishing off Alaska—pre-IFQ

The heated race for fish reduced quality and suppressed market development, prevented rationalization of capital investments, decreased safety, and increased the likelihood that catch limits would be exceeded.
Halibut Fishing off Alaska—IFQs

- Permanent allocation of shares of TAC to individual vessel owners
- Market-based transfer of quota shares between fishermen
- Limits on consolidation of quota shares
- Limits on transfer of quota shares between vessel classes
- Limits on leasing
Alaska’s Halibut Fishery: Post-IFQ

- The fishery has reorganized to deliver high-quality fresh product throughout a protracted season.
- Average exvessel price (Alaska) increased $0.53/kg; about $11 million per year in exvessel revenue.
- Fishermen received ~92% of this increase.
- Processors received ~8% of this increase.
- The distribution of benefits from this program has influenced the structure of all subsequent programs in Alaska.
Alaska’s Halibut Fishery: Post-IFQ

Safety at sea has improved.
Alaska’s Halibut Fishery: Post-IFQ

The number of permit holders and active fishing vessels has declined.
Alaska’s Halibut Fishery: Post-IFQ

Management of annual catch limits has become more precise.
Alaska’s Halibut Fishery: Post-IFQ

Ghostfishing and bycatch losses have been reduced.
Alaska’s Halibut Fishery: Post-IFQ

• Quota shares held by rural Alaskans increased from 14.4% in 1995 to 20.8% in 2009, but growth in some rural communities masks losses in others.

• Pre-IFQ halibut processors lost market share and revenues as fishers bypassed traditional supply chains through contracts with niche processors and wholesalers.
Alaska’s Halibut Fishery: Post-IFQ

Some elements of this fishery became increasingly resilient under a market-based IFQ management strategy, while other historic participants lost due to market opportunities to cash in their halibut shares, and social resilience has been reduced for some fishermen and fishery-dependent communities.
Alaska’s Halibut Fishery: Preemption by the Charter Sector

- Expansion of the charter sector catches reduces the quantity of fish available to individual commercial fishers in any given year and thus reduces their revenues.
- Expansion of charter sector catches also reduces the wealth of IFQ holders because the asset value of the IFQ is a function of current and expected future catches.
Sport Catches of Halibut
Deviations for Charter-Sector GHLs

Area 2C

Area 3A
IFQ commercial fishery & open-access charter fishery with increasing demand for sportfishing
Balancing Benefits of Commercial and Sport Fishing

\[
\text{Max}(NB) = \sum_{t=0}^{T} \delta^t (NB_{c,t} + NB_{s,t})
\]

subject to: \( h_{c,t} + h_{s,t} = f(x_t) \)
Balancing Benefits of Commercial and Sport Fishing

The optimal solution equates marginal (incremental) net benefits across uses.
Balancing Benefits of Commercial and Sport Fishing

• The overall optimal solution is suboptimal from the myopic perspective of each user group.
• Consequently, stakeholders will contest specific allocation decisions if political processes are used to effect the allocation.
• Changes in output prices, input prices, recreation participation rates, etc., change the optimal allocation.
• Because prices and participation rates are constantly changing, political allocation processes are unlikely to keep pace.
Alaska’s Halibut Fisheries

• Before 1995, the management paradigm put biological sustainability at risk and incentivized unsustainable investment in harvesting capacity.

• Adoption of IFQs improved biological and economic sustainability in the commercial sector.

• Expansion of the charter sector has been accommodated through uncompensated reallocation from the commercial sector but could be accommodated through market transactions.

• Much of the value gained by the commercial sector through IFQs is now being lost to a charter sector that dissipates the value to excess capital investment.