

The Fishery as a Watery Commons: Lessons from Other Policy Areas

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Overview

- Background
- The general problem
- Past policy efforts
- Dedicated access privilege (DAP) programs
- Experiences and lessons from seven other policy areas that have actual or potential common pool/commons problems
- DAP specifics
- Conclusion

Background

- Report for Environmental Defense

The general problem (1)

- Depletion of fisheries
 - Overfishing
 - Negative externalities
 - Absence of property rights
 - Improved technology of fishing
 - Incidental species and habitat damage

The general problem (2)

- Fisheries are a version of the commons problem
 - Stock-flow-replenishment problem
 - Excessive harvesting (flow) reduces the stock and reduces replenishment, etc.
 - Excessive harvesting is unlikely to arise if fishery is large and fishermen are “few” and “small”
 - Excessive harvesting is a problem if fishermen are “many” and/or technology improves

The general problem (3)

- Solution: property rights
 - Unitize a lake
 - Designate plots for shellfish, crustaceans, reef huggers
 - But for migratory, peripatetic fish?

Past policy efforts (1)

- Extend U.S. territorial boundaries
 - Extended to 200 nautical miles in 1976
- Restrict inputs so as to achieve output targets
- Close fisheries
- DAPs

Past policy efforts (2)

- Restrict inputs
 - Limits on type of gear
 - Limits on size or type of vessel
 - Limits on who can fish
 - Limits on days that a fishery is open
 - Limits on one-day trips

Past policy efforts (3)

- Consequences
 - Fishermen substitute other inputs, innovate, exceed output targets, leading to tighter restrictions on inputs
 - Alaska halibut fishery open 2-3 days *per year*, 1980-1994
 - Surf clam vessels permitted to fish only 6 hours *every other week*, 1990
 - “Fishing derbies”, “races for the fish”
 - Collapse of the New England cod fishery
 - Widespread inefficiency in many dimensions

Dedicated access privilege (DAP) programs (1)

- Set annual output targets – “total allowable catch” (TAC)
- Establish individual fishing quotas (IFQs) -
- % of the TAC; or
- Assign allocation to local cooperative; or
- Unitize (e.g., shellfish, crustaceans, reefs)
– No TAC needed
- Enforce the TAC and IFQs

DAPs (2)

- In place in 8 U.S. fisheries
 - Because of rent-seeking issues, U.S. Congress placed a moratorium on DAPs, 1996-2002
- A number of other fishing countries use DAPs
 - New Zealand, Australia, Canada, Iceland, The Netherlands, Norway, Greenland, Japan, Russia, Estonia

Seven other policy areas

- Electromagnetic spectrum
- SO₂ emissions
- Grazing on public lands
- Timber harvests on public lands
- Oil-gas-coal extraction from public lands
- Hard rock mineral extraction from public lands
- Surface water allocation

Electromagnetic spectrum

- Problem: “interference” (negative externalities)
- 1927, 1934 solution: Government (FCC) specifies uses, users, locations, frequencies, and power limits (“command and control”)
 - Renewable licenses; incumbent presumption
 - Use it or lose it
 - Competing users: “beauty contests”
- 1980s: lotteries for cell phone licenses
- 1993: auctions
 - Far greater flexibility

SO₂ Emissions

- Problem: SO₂ = acid rain, health consequences
- Pre- 1990: Command and control
- 1990 Clean Air Act: Annual maximum emission amount – permits -- allocated among electric utilities based on 1985-1987 emissions
 - Permits are granted in perpetuity
 - Utilities can buy/sell permits
 - Permits can be banked, need not be used
- Tradable permits provide flexibility
- Costs of SO₂ reduction far lower than originally expected
- “Cap and trade” is now a standard prescription

Grazing

- Open grazing = commons problem
- Forest Management Act of 1897
- Taylor Grazing Act of 1934
 - 10-year permits; renewable; local land owners; permits can't be traded (but ranches can be bought); use it or lose it
 - BLM permits sub-lease; USFS doesn't
 - Below-market fees
- Consequences
 - Overgrazing
 - Inadequate improvements

Timber harvests

- Open cutting = commons problem
- Control over national forests established in 1891 by DoI
- USFS established in 1905
 - USFS placed tracts at auction
 - Winner must harvest (use it or lose it), but permit can be transferred (with USFS permission)
- USFS criticized for not maximizing revenues, building too many access roads, allowing logging in sensitive areas, allowing clear cutting

Oil, gas, coal extraction

- Open drilling = commons problem
- Auctions of specific tracts since 1920 by DoI
 - If tract is too small, then still a common pool problem
- Winner must drill (use it or lose it), but lease is transferable (with DoI approval)
- DoI criticized for drilling in sensitive areas and for post-mining environmental damage (coal)

Hard rock mining

- Absence of claims = commons problem
- General Mining Law of 1872
- Stake a claim (20 acres) on public lands
 - Must show some evidence of a minable deposit
 - Get full ownership by filing a mineral patent
 - Can then use the land for any purpose
- Critics: Small fees, no royalties, environmental damage

Surface water usage

- Unlimited use = commons problem
- Water rights governed by state law
 - East of the Rockies: riparian rights (proximity)
 - West of the Rockies: prior appropriation (first in time is first in right)
- Rights expressed in absolute amounts
 - Problems at times of droughts
- Use it or lose it; limited transferability (but trend is toward greater transferability)
- Below market fees

Lessons from the seven areas

- Mild trend toward greater market orientation
 - Spectrum auctions; SO₂ trading; increased surface water transactions
- Permits solve the common pool problem (but not necessarily other externality problems)
- Characteristics of permits vary and matter
 - Use it or lose it; longevity; renewability; flexibility; transferability
- Allocation methods vary
 - Auctions; lotteries; incumbency

DAPs once again

- Unitize where feasible
 - Shellfish, crustaceans, reefs
- Where unitization isn't possible, set the TAC
- Allocate IFQs
- Enforce the TAC and IFQs

DAPs more specifically

- IFQs should be long-lived, tradable, divisible
- Auction the IFQs
 - Most quickly gets the resource into the most efficient hands
 - Eliminates rent seeking
 - Eliminates anticipatory over-fishing
 - Avoids public giveaway
- Enforce where the “choke points” are fewest
 - On-boat monitoring can reduce other externalities

Conclusion

- Fishery problems are real; the fishery is a watery commons
- Property rights oriented solutions are feasible
 - Unitization – where feasible – is the most straightforward
- But, in the absence of unitization, for migratory/peripatetic fish government must still set the TAC and enforce