

CATCH SHARES: A USEFUL TOOL WITH LIMITS

Catch shares are a method of fisheries management in which fishermen get the right to harvest a share of the total allowable catch. They are widely used, and some argue they promote stewardship, but their actual impact on the health of fish populations is unclear. According to four recent studies supported by the Lenfest Ocean Program, catch shares reduce year-to-year variation in fishing mortality but do not consistently affect other important ecological metrics, such as the biomass of the population. The studies also found several attributes that make catch shares more effective: durability, transferability, exclusivity, and industry involvement.

Effects of Catch Shares

Three studies analyzed the effects of catch share programs (Essington 2010, Melnychuk et al. 2012, Essington et al. 2012). They compared fisheries before and after implementation of catch shares, and they also compared fisheries with and without catch shares.

They found that the following effects were attributable to catch shares:

- Fisheries using catch shares met fleet-wide quotas more consistently, and there was less variation in their mortality and landings.
- Fishermen were more likely to comply with catch limits.
- Rates of fish discards declined.
- Overfishing was less common than under programs that control fishing effort (rather than setting catch limits).
- Overfishing was just as common as in fisheries managed with fleet-wide quotas. However, major overfishing (mortality rate at least 50 percent above target) was less common under catch shares than under both effort controls and fleet-wide quotas.
- Catch shares did not appear to change the biomass of fish remaining in the water.

BACKGROUND

Catch share programs are like cap-and-trade for fish. They set a fleet-wide fishing limit, or quota, and assign “shares” of that quota to individual fishermen or to fishing groups. Holders of catch shares may use them to fish during any part of the season or, in many cases, sell them to others. The concept is that when fishermen have an ownership right to part of the fishery, they will place greater importance on long-term sustainability.

Figure 1

EFFECTS OF CATCH SHARES

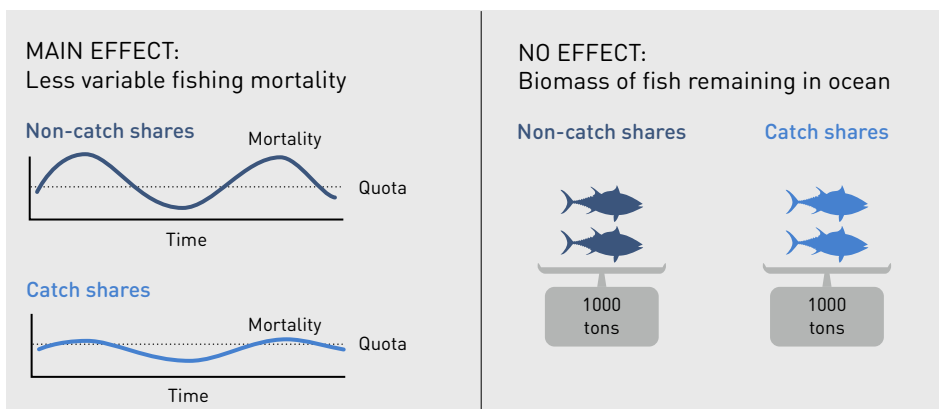
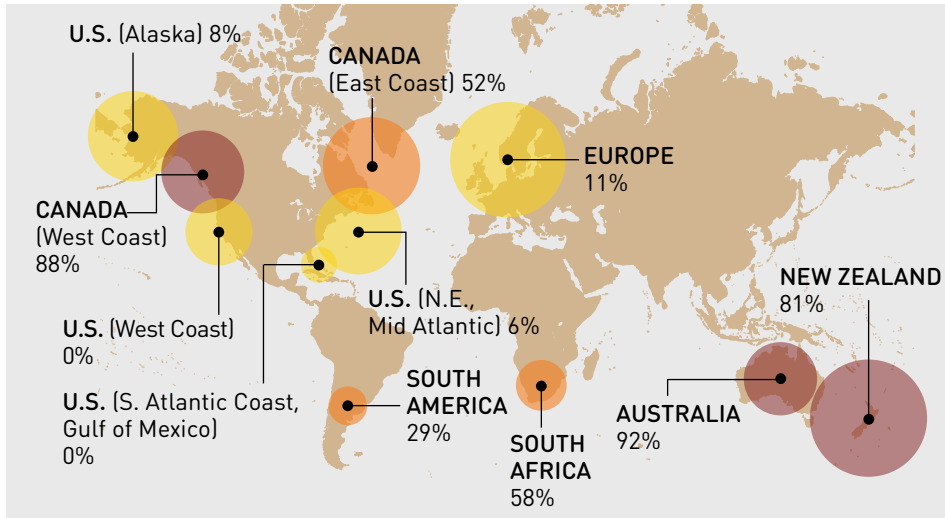
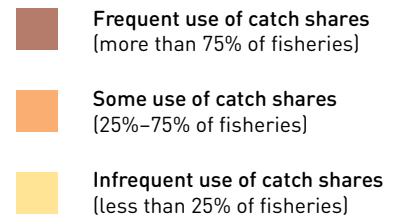


Figure 2

FISHERY REGIONS THAT USED CATCH SHARES, 2000-2004



This map shows fishery size and frequency of catch share use. The circles represent the number of stocks in the study, ranging from 6 to 64. Frequency of use is defined by more than 75 percent of total catch under a catch share program. Adapted from Melnychuk et al. (2012).



Important attributes of catch share programs

Two studies looked at whether certain attributes make catch share programs more effective (Essington et al. 2012, Melnychuk et al. 2014). The most important attributes were:

- **Durability**, or the right of fishermen to retain shares from year to year. This appeared necessary for reducing fluctuations in fishing mortality.
- **Transferability**, or the right of fishermen to transfer shares to later years or sell them to other fishermen. Fisheries with transferable catch shares were closer to biomass target levels than those with non-transferable shares, but regional differences had a stronger effect on biomass.
- **Exclusivity**, or the proportion of the fishery covered by catch shares. Fisheries with high exclusivity were generally close to the target for fishing mortality.
- **Industry involvement**, meaning whether or not the fishing industry was heavily involved in establishing the catch share program. In programs with low exclusivity, industry involvement was associated with mortality well below the target, whereas mortality in government-driven programs was well above.

Overall conclusions

A common theme of the papers is that catch shares are useful but not necessarily sufficient to restore or maintain a healthy fishery. They eliminate the “race to fish” and tend to stabilize fishing mortality rates. And they may result in mortality rates near target levels. However, catch shares do not appear to greatly affect biomass, and numerous fisheries with the attributes associated with effective catch share systems do not have high conservation status. Catch shares alone do not overcome other factors that promote overfishing, such as the setting of catch limits that exceed scientific recommendations.

CITATIONS

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