

## **Resources Seminar**

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My work focuses on fisheries management, and studies the effects of different regulatory policies on productivity, efficiency, structural organization and individual behavior.

My dissertation empirically evaluates five major questions about individual transferable quotas [ITQs] in fisheries:

1. Do ITQs increase productivity (relative to traditional management) by eliminating excess vessels, labor and gear from the fishery?
2. Are gains from trading of quotas exploited, such that inefficient vessels exit the fishery, creating an increasingly homogeneous fleet?
3. Do ITQs increase vertical and horizontal integration, driving out independent fishermen?
4. What is the dynamic interaction between the council's choice of total quota and collusion of industry participants?
5. Do ITQs reduce total fishing effort or merely redistribute it between fisheries?

The first two questions evaluate economists' primary arguments for ITQs over traditional management: traditional management leads to excessive capital investment as vessels race to claim a share of the total allowable catch, while ITQs encourage the least efficient vessels to sell their quotas to more efficient vessels. Question three addresses the common claim that ITQs give an unfair advantage to large-scale fishermen, increasing vertical and horizontal integration; as the degree of integration has important implications for the distribution of costs and benefits of ITQs, this issue is crucial to future negotiations. Question four evaluates the impact of regulatory policy on competitive behavior within the industry. The fifth question asks whether effort removed from ITQ fisheries is redirected to other fisheries, which will determine the urgency of regulatory harmonization across management councils to protect the integrity of the ecosystem.

The research I am presenting Wednesday models exit of vessels in the surf clam and ocean quahog fishery. By developing and estimating a discrete choice model of entry-exit-participation level, economists can better predict industry response to policy changes. Estimation of the ordered probit model provides information on how the probability of a vessel exiting the industry changed in response to the transition from command-and-control regulation to individual transferable quotas. The first part of my research will model the harvester's choice among:

1. specializing in surf clam harvesting;
2. specializing in ocean quahog harvesting;
3. generalizing in both surf clam and ocean quahog harvesting;
4. retaining option to harvest (retaining permit and quota for surf clam and ocean quahog fishery but abstaining from harvesting);
5. exiting (selling allocation and failure to renew permit).

I will present a probit and ordered probit model of participation estimated using NMFS data from harvesters' logbooks, vessel permit files, and allocation ownership files.