

Markets and Spatial Management in Fisheries: Evidence and Options for the US West Coast Groundfish Fishery

Wednesday June 25, 2014

Hyatt Regency Orange County
11999 Harbor Boulevard, Garden Grove, CA 92840



Project Background:

In January 2011 the West Coast Groundfish fishery transitioned to a multispecies Individual Transferable Quota (ITQ) system, a form of catch-shares in which fishermen own shares of the total allowable catch for all target species and threatened bycatch species. This fishery presents an interesting example of the weak stock hurdle facing many fisheries around the world: species such as yelloweye and canary rockfish have been historically overfished, and since they grow and reproduce very slowly, they have extremely low annual catch limits which can be exceeded in a single accidental haul. In this project, funded by Sea Grant, researchers at the University of California Santa Barbara and the University of Washington are examining the impact of the switch to ITQ management on fishing behavior and other socio-economic dimensions of the fishery given the weak stock challenge, including the formation of risk pools, gear switching, spatial and temporal fishing patterns, and discarding.

At this workshop, researchers and collaborators on this project will present the results and findings of their research to stakeholders involved in the West Coast groundfish fishery and hope to have a productive, interactive discussion about the project. This workshop is open to anyone.

If interested in attending, please RSVP to Katie Nichols at (knichols@ucsb.edu) prior to June 20th. Travel funds may be available to offset attendance costs. To apply for travel funding, please email Katie a short statement of interest and cost estimate by June 16th.

Draft Agenda
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| 9:00 | Participants arrive, coffee available |
| 9:30 | Welcome |
| 9:30 – 10:00 | Chris Costello
<i>Effects of Catch Shares on Fishery Exploitation</i> |
| 10:15 – 10:45 | Kate Labrum
<i>TNC's engagement in the groundfish fishery: Results of the California Risk Pool</i> |
| 10:45 – 11:15 | Peter Kuriyama
<i>Incentivizing selectivity in the West Coast Groundfish Fishery</i> |
| 11:15 – 11:30 | Break |
| 11:30 – 12:00 | Jono Wilson (presented by Chris Costello)
<i>Spatial fishery closures in multi species ITQ fisheries</i> |
| 12:00 – 12:30 | Bob Deacon
<i>Harvesters' responses to bycatch ITQs: Individual and collective adaptations in fishing methods</i> |
| 12:30 – 1:30 | Lunch provided |
| 1:30 – 2:00 | Steve Miller
<i>Harvesters' responses to bycatch ITQs: Spatial adjustments</i> |
| 2:00 – 3:30 | Discussion |
| 4:00 | Close |

Presentation Descriptions

Dr. Christopher Costello, University of California Santa Barbara

Effects of Catch Shares on Fishery Exploitation

We examine whether catch share fisheries adopt a fundamentally different control rule than do non-catch-share fisheries, even when both groups are regulated by a total allowable catch (TAC). We find that catch share adoption leads to a decrease in the policy function, and that this is consistent with economic theory of regulatory capture. The biological effects of this can be very significant: they often lead to stocks that are 50% larger under catch shares than under conventional management.

Kate Labrum, The Nature Conservancy

TNC's engagement in the groundfish fishery: Results of the California Risk Pool

Over the course of the last several years The Nature Conservancy has sought to work collaboratively with the fishing industry and community leaders to use the best science and technology to improve their ability to catch fish and ensure resource health. For the past three years TNC has collaborated with a dozen groundfish fishing boats to form the California Risk Pool, which is an agreement to pool overfished species quota and manage the risk of catching these constraining species to maximize conservation and economic opportunities while retaining local access to fish. The risk pool agreement requires adherence to spatial fishing plans and use of an electronic logbook system developed by TNC called eCatch. So far, the risk pool has resulted in reduced bycatch of overfished species, increased harvests of target species, and tracking and sharing of spatial information using eCatch. In a separate endeavor, the risk pool plans to engage in a stakeholder driven process to propose reconfiguration of the Rockfish Conservation Area, which is a set of depth based spatial closures along the coast established in 2002 by NMFS with the primary goal of helping protect overfished species that occur in the depth zone and help with rebuilding efforts.

Peter Kuriyama, University of Washington

Incentivizing selectivity in the West Coast Groundfish Fishery

Fisheries managers are charged with achieving biological and economic sustainability. For complex multispecies fisheries, these two goals are difficult to achieve. In recent years, catch shares have been increasingly implemented to ensure biological and economic sustainability. Under catch shares, individual fishers are allocated catch quotas for each species, and challenged to catch their quotas of valuable target species while avoiding overfished species with low quotas. If fishers exceed their quota for any species, they must cease fishing until additional quota can be leased from others. As a result, fishers have incentives to minimize bycatch of non-target species by switching gear types and by fishing in different areas. The US West Coast Groundfish Fishery transitioned to catch shares in 2011. Quotas for overfished species are extremely low. For example, 93% of fishers are allocated 10 or fewer individual yelloweye rockfish in one year. Currently, there is no overfishing on the 26 managed species, but catches are far short of allowable quotas, except for three species. Additionally, discard rates have declined from 45% to 10% (2002-2012). Thus in the US West Coast, catch shares achieve biological sustainability perhaps at the expense of economic sustainability.

Dr. Jono Wilson, The Nature Conservancy

Spatial fishery closures in multi species ITQ fisheries

In this project we examine the role of no-take reserves in managing multi-species complexes under ITQ management. We use simulation modeling to determine the costs and benefits of using no-take reserves as a management tool for meeting fishery objectives in a mixed-stock, ITQ management system with hard bycatch caps and 100% observer coverage.

Dr. Robert Deacon, University of California Santa Barbara

Harvesters' responses to bycatch ITQs: Individual and collective adaptations in fishing methods

Data from logbooks and other information sources indicates that fishing methods changed following the introduction of ITQs for bycatch (and target) species and we interpret these changes as causal. Some of the shifts were subtle, but all are statistically discernable in the data. We report shifts in set times and tow duration for trawl tows following ITQ implementation. We also report shifts in the type of gear used by harvesters. While causation is invariably difficult to identify, we employ statistical methods that control for other potential causal factors in order to isolate the ITQ implementation effect. Moreover, the nature of the resource and the harvest methods used to harvest it make our causal interpretation all the more plausible. We also report summary evidence on an important collective action taken by fishers in response to bycatch ITQs, the creation and operation of 'risk pools'. We conclude that these nuanced responses, taken voluntarily in response to bycatch ITQs, would be difficult or impossible to achieve with prescriptive regulation.

Steve Miller, University of California Santa Barbara

Harvesters' responses to bycatch ITQs: Spatial adjustments

The introduction of individual transferable quotas (ITQs) for bycatch species in 2011 forced fishers to pay for each pound of fish they caught. One way fishers can avoid such costs is by moving to areas where bycatch is less likely to be encountered. Using trawl logbooks and other data, we examine the extent to which such spatial reallocation of effort occurred as a means to reduce bycatch incidence. In particular, we use a combination of location and economic data to estimate fishers' marginal willingness to pay to avoid a pound of bycatch. The resulting implied prices reveal both the costs of conservation and an important contrast with explicit spatial management. Under ITQs, we find that fishers avoid areas around Rockfish Conservation Areas rather than 'fishing the line' as might be expected under spatial management alone.