Research Set Aside Quotas: Market Design to Inform Rec. Fisheries Management

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Introduction

Research Set-Aside (RSA) Programs

- Mechanism to finance applied research that informs fishery management decisions and improves stock assessments.
- Funds generated through the sale of set-aside allocations for quota managed or days-at-sea managed fisheries.
- RSA projects selected through a competitive grants process, with priorities established by the Councils.

Introduction

RSA Programs

- Currently unique to the New England/Greater Atlantic region.
- Three active RSA programs: Sea Scallop, Herring, and Monkfish ($15 million in 2020).
- One inactive RSA program: Mid-Atlantic RSA (Summer Flounder, Black Sea Bass and Scup; Mackerel, Squid and Butterfish; Bluefish; Tilefish).

Introduction

Benefits of RSA Programs?

- Primary: research that informs fishery management.
- Ancillary: associated with the specific design of the programs.

Mid-Atlantic RSA Program

Overview

- Program ran from years 2002 to 2014.
- It decoupled the data collection from the revenue generation (i.e. auctions winners did not necessarily carry out the research).
- It funded 41 projects at a total cost of $16.3 million.
- Noncompliance with RSA quota reporting requirements led to suspension of the program.

Mid-Atlantic RSA Program

The quota market

- RSA quota allocated in lots of different sizes through sequential English auctions.
- Two different sets of auctions conducted: one for the commercial sector and one for the recreational for-hire sector.
- In the last years of the program, 100-150 vessels participated annually in the auctions (over 40 for-hire vessels).
- Vessels received a special permit to harvest RSA quota under exemptions specified by the NMFS Regional Administrator.

RSA program design

Three main components of an RSA program:

1. Selecting candidate fisheries and research projects to be funded.
2. Maximizing funding available for the research projects.
3. Enforcing and monitoring the RSA quota.

RSA program design

1. Selection of research projects:
   - What should be the role of the SSC in screening projects?
   - Should recreational money be used for rec. fishing studies?
   - How do factors such as scientific uncertainty (i.e. larger OFL CV), likelihood of a constraining ABC, or conflicts over allocation help to identify fisheries?

RSA program design

2. Revenue generation:

   - RSA quota exemptions (e.g. fishing after season closed, fishing in closed areas, fishing above trip possession limits).
   - Allocation mechanisms (e.g. auction vs posted-price offers, single-species vs bundled quota).
   - Sector-specific (recreational and commercial) vs common auctions.
   - Strategies to encourage participation (e.g. address liquidity constraints, limit entry fees).

RSA program design

3. Enforcing and monitoring:

   - Minimum requirements (e.g. VMS, observers, hail-in & hail-out, designated ports for landing RSA quota).
   - Quota leasing and transfers (e.g. allowed vs forbidden).
   - Choice of penalties (i.e. for non-compliance).

RSA program design

- Example: want to sell a quota lot of 4,000 lbs. of summer flounder and a quota lot of 3,000 lbs. of scup. They are typically caught together. How to do it?

English Auction	Bids & values	Auction result	
	Bundle	Wins?	V. price
For-Hire Vessel 1	\$14,000	Yes	\$12,000
For-Hire Vessel 2	\$12,000	No	\$0
For-Hire Vessel 3	\$10,000	No	\$0

RSA program design

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- Selling the bundle would result in $12,000 in revenues.

RSA program design

- Example: want to sell a quota lot of 4,000 lbs. of summer flounder and a quota lot of 3,000 lbs. of scup. They are typically caught together. How to do it?

Vickrey Auction	Bids & values			Auction result	
	S.Flounder	Scup	Bundle	Wins?	V. price
For-Hire Vessel 1	\$8,000	\$4,000	\$14,000	Yes	\$7,000
For-Hire Vessel 2	\$4,000	\$7,000	\$12,000	Yes	\$6,000
For-Hire Vessel 3	\$7,000	\$1,000	\$10,000	No	\$0

RSA program design

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- Package auction (Vickrey) more efficient and higher revenue (\$13,000 vs \$12,000) than English auction for bundled quota.
- Additionally, it provides information on complementarity.

RSA potential ancillary benefits

- Increased efficiency (i.e. market allocation vs sorting induced by current regulations).
- Information on quota demand (e.g. to inform quota reallocation between commercial and rec. sectors).
- Willingness to pay for alternative regulatory waivers (i.e. What restrictions are more costly to industry?).
- Information on species' harvest complementarities.
- Price signals (e.g. thin individual quota markets).

RSA implementation challenges

- Making sure research results actually inform management decisions.
- Preventing collusion in the auctions.
- Ensuring transparency (i.e. relevant information available to managers).
- Including private anglers.
- Ensuring compliance with program rules.

Thanks