THE ECONOMIC IMPACT OF MANAGEMENT DECISIONS IN THE SOUTH ATLANTIC SNAPPER GROUPER FISHERY

Catch Shares Committee Meeting
Jekyll Island, GA

Presented by:
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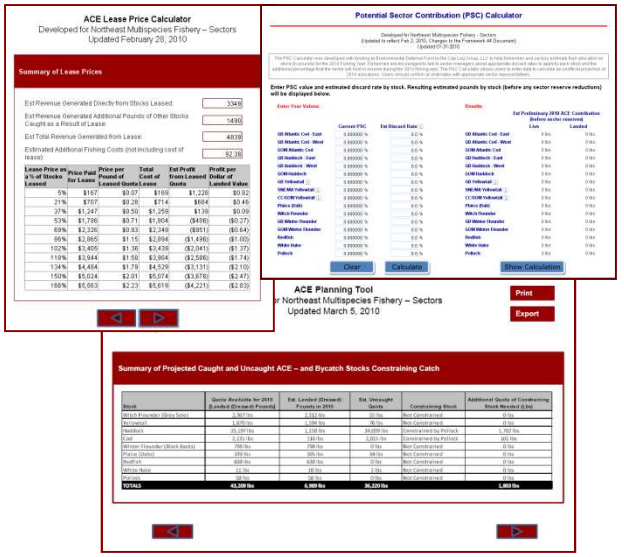
March 1, 2010

Company Overview

Cap Log Group, LLC (CapLog) was officially established earlier this year to address the business needs of fishermen, fishing businesses and fishing communities transitioning to new regulatory regimes.

The Group's unique network of fishermen, economists, entrepreneurs and bankers offers services that aim to help fishermen and the fishing industry solve the business and financial challenges that appear during the transition to catch shares. It also develops web-based tools that help the fishermen and the fishing industry operate more successfully within catch shares. Michael Clayton is the Founder and Managing Member of CapLog.

CapLog's work in the South Atlantic has been supported and funded by the Environmental Defense Fund (EDF).



By working with groups of fishermen, fishing communities and local banks to understand the business value of catch shares, CapLog has a unique capability to help fishermen of all sizes develop business plans that can be financed by existing lenders in their communities.

Purpose of Discussion

Purpose of Work:

Provide the Catch Share Committee with a framework and tool for estimating the impact of status quo, catch share and other approaches to managing the South Atlantic Snapper Grouper (SASG) fishery in relation to the ***number of vessels and average profitability*** of:

(a) the overall fishery

(b) the following vessel groups within the fishery

- (i) Florida (ex. Keys) / Georgia Bandit Vessels
- (ii) South Carolina Bandit Vessels
- (iii) North Carolina Bandit Vessels
- (iv) Florida Keys Vessels (All Gear Types)
- (v) Longliner Vessels (All South Atlantic)
- (vi) Spear Vessels (All South Atlantic)
- (vii) Pots and Traps Vessels (All South Atlantic)

Goals of Presentation:

(1) Understand a general picture of the current situation

(2) Estimate the realm of possibilities from different management choices

(3) Identify questions and possible next steps as a result of the discussion

Acknowledgements and Data Sources

CapLog would like to thank the following individuals and institutions for providing aggregated (non-confidential) data and for participating in interviews that informed this report.

That said, the information, calculations and opinions presented in this report are those of CapLog and should not be attributed to any of the persons or institutions listed below:

- Chris Hayes, Atlantic Coastal Cooperative Statistics Program (ACCSP)
- Tom Jamir, Larry Perruso and Kevin McCarthy
  NOAA/NMFS Southeast Fishery Science Center
- Kate Quigley, South Atlantic Fishery Management Council
- Jim Waters, NFMS Southeast Fisheries Center (SEFC)
- Eileen Dougherty, Ryan Ono, Kate Culzoni and Kent Strauss
  Environmental Defense Fund
- Doug Rader and Pam Baker, Environmental Defense Fund
- Jim Sanchirico, UC Davis Department of Environmental Science and Policy
- Dick Allen, Consultant – Fishery Economics
- South Atlantic Snapper Grouper Fishermen: Tom Burgess, Chris Connell, Phil Conklin, Michael (Chops) Cowdrey, Don Horn, Larry Jones, Chris Long, James Paskiewicz, Bob Preston, Matt Ruby, David Thomas

Description of the status quo and general catch share concepts

Status Quo – Current Approach

- Uses two-for-one policy for transferring permits
- Uses trip limits (e.g., snowy grouper and greater amberjack) on stock-by-stock basis
- Uses area closures
- Uses spawning season closures
- Closes fishing season when aggregate quota is met

Catch Share – General Concept

- Removes two-for-one policy for transferring permits
- Establishes transferrable quota (by stock)
- Removes trip limits (e.g., 100 lb snowy grouper limit) on stock-by-stock basis
- Commercial fishermen responsible for catching allocated quota across full year

Snapshot of the SASG fishery – Profitability and Number of Vessels

As a first brush, it is important to recognize that the number of vessels in the fishery has a direct impact on the average profitability of those vessels. In 2008, the SASG fishery had 742 vessels that landed at least one pound of fish and 502 vessels that landed at least 500 pounds of fish.

# of Vessels	700	300	100
Est. Number of Trips / Vessel	6 trips	14 trips	42 trips
Total Est. Landings / Vessel *	6k lbs	14k lbs	42k lbs
Annual Trip Revenue / Vessel **	$15k	$37k	$111k
Annual Trip Costs / Vessel ***	$13k	$30k	$92k
Annual Trip Profit / Vessel	$3k	$6k	$19k
Annual Fixed Costs / Vessel ****	$ 8,000	$ 11,500	$ 11,500

Catch share fisheries can use accumulation caps to affect the number of vessels and the related profitability of those vessels. They can also allow permit / quota holders to benefit more from voluntary exchanges that depend on the value of the fishing privilege (quota) to their particular business.

* Assumes average 1000/lbs per trip

** Assumes (a) average annual landings for 2006-2008 period for scamp, yellowtail snapper, grey snapper, lane snapper, mutton snapper and cubera snapper, (b) the preferred ACL alternative in Amendment 17b for golden tilefish, black sea bass, snowy grouper, and greater amberjack and for gag, black grouper and red grouper (collective limit of 662,403 pounds then allocated across stocks based on the ratio of landings between these species for the 2006-2008 period), and (c) the preferred under Amendment 17a for red snapper.

*** Based on average trip costs (fuel, ice, bait, food, captain/crew wages, supplies) for all vessels in the vessel group

**** Represents 100% of vessel's annual fixed costs (excluding commercial fishing licenses and permits, business taxes paid by the vessel, office expenses, car and truck expenses, miscellaneous one-time expenditures). Fixed costs should be allocated in proportion to the percentage of time the vessel fishes in the SASG fishery.

Snapshot of the SASG fishery - Natural constraints and economic advantages

Realistically, every fishery has natural biological and geographic characteristics that impact the ability of individual operators to harvest particular stocks. Gear characteristics, stock behavior and comparative economic advantages must be taken into consideration when estimating the economic impact of different management choices. Our economic model uses broad minimum and maximum boundaries for each vessel group and stock (such as the one listed below) to constrain which vessel groups target and land different fish.

Sample - Black Sea Bass

Vessel Group	Min	Max	Reason
FL Keys Vessels	0%	2%	Only in southern FL during cold winters. FL Keys fishermen have not caught BSB.
FL Bandit Vessels	0%	10%	According to fishermen and the SAFE report, black sea bass are not caught in SE FL. The historical harvest high is 0.5% (in 2006).
NC Bandit Vessels	0%	35%	Plentiful around NC, but the pot sector landings constrain this sector. The NC bandit sector catches about 70% of the non-pot sector-caught black sea bass.
SC Bandit Vessels	0%	15%	Has multiple populations around NC according to the SAFE report which can be accessed by some SC fishermen. The SC bandit sector catches about 25% of the non-pot sector-caught black sea bass. Also the pot sector landings constrain this sector.
SA Longline Vessels	0%	5%	Longlines are normally placed in waters deeper than where black sea bass reside (60-200 ft). The historical harvest high is 1.2% (in 2003). Also the pot sector landings constrain this sector.
SA Pot and Trap Vessels	30%	100%	Black sea bass is the primary target of pot fishermen.
SA Spear Vessels	0%	3%	Black sea bass occurs off of NC and the eastern Gulf of Mexico. While it resides in depths that can be accessed by spearfishermen, the historical landings high is 0.3% (in 2002).

Snapshot of the SASG fishery status quo – 2008 estimates by vessel group

A snapshot of the fishery shows how the average annual vessel trip profit (before fixed costs) by vessel group would range between $500 and $15k – assuming similar landings and costs for vessels in the same group.

In 2008, we estimate these 742 vessels harvested an ex-vessel value of $11 mil for a gross trip profit of $2 mil. The annual fixed costs (vessel maintenance and insurance, docking, etc.) are not included in the gross trip profit.

2008 Estimates for:	FL Keys	FL Bandit	NC Bandit	SC Bandit	SA Longline	SA Pots	SA Spear
Total # of Vessels	241	207	148	51	17	43	35
Total Landings (lbs)	1,105,983	631,126	1,109,211	770,971	249,590	286,384	56,509
Annual Trip Revenue / Vessel *	$ 9,800	$ 8,200	$ 21,200	$ 51,100	$ 34,300	$ 13,400	$ 5,200
Annual Trip Costs / Vessel **	$ 7,500	$ 4,500	$ 13,400	$ 37,700	$ 26,100	$ 9,300	$ 4,800
Annual Trip Profit / Vessel	$ 2,300	$ 3,700	$ 7,800	$ 13,400	$ 8,200	$ 4,100	$ 400
Contribution Margin (Per Trip Profit / Per Trip Revenue)	23%	45%	37%	26%	24%	31%	8%
Annual Fixed Costs / Vessel ***	$ 8,000	$ 11,500	$ 11,500	$ 11,500	$ 11,400	$ 4,600	$ 11,350

* Assumes all vessels in the vessel group catch an equal amount

** Based on average trip costs (fuel, ice, bait, food, captain/crew wages, supplies) for all vessels in the vessel group

*** Represents 100% of vessel's annual fixed costs (excluding commercial fishing licenses and permits, business taxes paid by the vessel, office expenses, car and truck expenses, miscellaneous one-time expenditures). Fixed costs should be allocated in proportion to the percentage of time the vessel fishes in the SASG fishery.

Snapshot of the SASG fishery status quo – 2008 estimates by vessel landings

A more granular approach shows that, in each vessel group, a relatively small number of vessels landed a substantial amount of the total SASG harvest in 2008.

The charts to the right have been generated using both ACCSP (price) and NFMS (landings) data. Vessels were first ranked by total landings for each vessel group and then separated into quartiles (25%) based on that ranking. The landings by quartile represent the sum of the total 2008 landings for each vessel in the quartile.

Florida Keys - All Vessels

	# of Vessels	Total SASG Catch (lbs)	% of Vessel Group's Total Catch	Est. Ave. SASG Rev ($)	Est Ave. SASG Rev ($) / Vessel
Top Quartile	60	933,449	84%	$ 1,939,159	$ 32,185
Upper Mid Quartile	60	131,979	12%	$ 316,188	$ 5,248
Lower Mid Quartile	60	35,052	3%	$ 85,249	$ 1,415
Bottom Quartile	60	5,503	0%	$ 13,423	$ 223

Florida Bandit

	# of Vessels	Total SASG Catch (lbs)	% of Vessel Group's Total Catch	Est. Ave. SASG Rev ($)	Est Ave. SASG Rev ($) / Vessel
Top Quartile	52	539,981	86%	$ 1,475,007	$ 28,503
Upper Mid Quartile	52	73,277	12%	$ 181,520	$ 3,508
Lower Mid Quartile	52	14,588	2%	$ 36,778	$ 711
Bottom Quartile	52	3,280	1%	$ 8,455	$ 163

North Carolina Bandit

	# of Vessels	Total SASG Catch (lbs)	% of Vessel Group's Total Catch	Est. Ave. SASG Rev ($)	Est Ave. SASG Rev ($) / Vessel
Top Quartile	37	900,645	81%	$ 2,554,199	$ 69,032
Upper Mid Quartile	37	169,803	15%	$ 471,916	$ 12,754
Lower Mid Quartile	37	33,836	3%	$ 93,587	$ 2,529
Bottom Quartile	37	4,928	0%	$ 13,304	$ 360

South Carolina Bandit

	# of Vessels	Total SASG Catch (lbs)	% of Vessel Group's Total Catch	Est. Ave. SASG Rev ($)	Est Ave. SASG Rev ($) / Vessel
Top Quartile	13	494,248	64%	$ 1,655,164	$ 129,817
Upper Mid Quartile	13	205,316	27%	$ 702,208	$ 55,075
Lower Mid Quartile	13	64,996	8%	$ 226,102	$ 17,733
Bottom Quartile	13	6,412	1%	$ 20,419	$ 1,601

Snapshot of the SASG fishery status quo – 2008 estimates by vessel landings

The current distribution of harvest seems to suggest the importance of discussing how best to ensure access for new, part-time and smaller-scale fishermen to the fishery – rather than focusing on consolidation and concentration which may have already occurred.

South Atlantic Longline - All Vessels

	# of Vessels	Total SASG Catch (lbs)	% of Vessel Group's Total Catch	Est. Ave. SASG Rev ($)	Est Ave. SASG Rev ($) / Vessel
Top Quartile	4	181,233	73%	$ 423,092	$ 99,551
Upper Mid Quartile	4	47,854	19%	$ 112,150	$ 26,388
Lower Mid Quartile	4	16,629	7%	$ 38,835	$ 9,138
Bottom Quartile	4	3,874	2%	$ 9,120	$ 2,146

South Atlantic Traps and Pots – All Vessels

	# of Vessels	Total SASG Catch (lbs)	% of Vessel Group's Total Catch	Est. Ave. SASG Rev ($)	Est Ave. SASG Rev ($) / Vessel
Top Quartile	11	205,834	72%	$ 415,381	$ 38,640
Upper Mid Quartile	11	52,468	18%	$ 105,817	$ 9,843
Lower Mid Quartile	11	22,179	8%	$ 44,704	$ 4,158
Bottom Quartile	11	5,903	2%	$ 11,897	$ 1,107

South Atlantic Spears – All Vessels

	# of Vessels	Total SASG Catch (lbs)	% of Vessel Group's Total Catch	Est. Ave. SASG Rev ($)	Est Ave. SASG Rev ($) / Vessel
Top Quartile	9	41,362	73%	$ 135,120	$ 15,442
Upper Mid Quartile	9	12,005	21%	$ 36,223	$ 4,140
Lower Mid Quartile	9	2,518	4%	$ 7,713	$ 881
Bottom Quartile	9	624	1%	$ 1,939	$ 222

As discussed later in the presentation, both market-based and design-based solutions can be used to meet the goals of ensuring sufficient access to a catch share fishery to different constituent groups (e.g., new entrants, part-time fishermen, smaller-scale fishermen).

Snapshot of the SASG fishery under a catch share

A catch share can also allow some quota to flow between more and less profitable vessel groups – given the biological and geographic constraints of the SASG stocks and each vessel group's revenue and cost structures. The flow will be affected by the initial allocation and eligibility requirements.

How many vessels are eligible for an initial allocation?

	Number of vessels harvesting at least one pound in each year (2006-2008)	Number of vessels harvesting at least 500 pounds in each year (2006-2008)	Number of vessels harvesting at least 500 pounds in each year (2004-2008)
Florida Keys	241	169	169
Florida Bandit	207	98	98
NC Bandit	115	83	79
SC Bandit	51	46	43
SA Longline	17	13	12
SA Pots	40	35	35
SA Spear	27	14	12

How will the quota initially be allocated?

	Average Annual Landings by Stock for Past Three Years (2006-2008)	% of Total	Average Annual Landings for "Best" Three Years out of Five Years (2004-2008)	% of Total	Average Annual Landings by Stock for Past Five Years (2004-2008)	% of Total
All Florida Keys Vessels	1,382,884 lbs	32%	1,500,633 lbs	34%	1,464,046 lbs	34%
Bandit Vessels - Florida	638,414 lbs	15%	614,187 lbs	14%	578,643 lbs	14%
Bandit Vessels - North Carolina	847,386 lbs	20%	845,795 lbs	19%	809,683 lbs	19%
Bandit Vessels - South Carolina	798,218 lbs	19%	847,502 lbs	19%	820,625 lbs	19%
Longline Vessels - All States	271,374 lbs	6%	274,068 lbs	6%	268,235 lbs	6%
Pots Vessels - All States	277,550 lbs	7%	274,262 lbs	6%	274,901 lbs	6%
Spear Vessels - All States	53,497 lbs	1%	59,925 lbs	1%	53,190 lbs	1%

Factors possibly affecting snapshots of the status quo SASG fishery

Will the current status quo tools increase the cost of fishing?

Other fisheries with extensive trip limits see fishermen discarding 2-3x the weight of their initial catch. Based on interviews in the South Atlantic, fishermen generally *have not yet* seen such behavior; however, some vessel groups may have abandoned entire target stocks (e.g., snowy grouper) due to negative profits resulting from low trip limits.

Stock	Current Trip Limit
Golden Tilefish	4000 lbs / trip until 75% of TAC reached 300 lbs / trip after 75% reached
Greater Amberjack	1000 lbs / trip
Pink Snapper	120 fish / trip
Snowy Grouper	100 lbs / trip

Stock	Current Seasonal Closure
Black Sea Bass	Closed Dec 2009 – June 2010
Red Snapper	Closed
Vermilion Snapper	TBD

"If we could have landed pinkies and groupers now and b-liners (vermilion snapper) later [rather than fish in February for b-liners until the fishery closes], we could come back full in two days. We will likely be out for ten days to try and catch enough b-liners to justify our trip" (South Atlantic fisherman, 2010)

South Atlantic fishermen have reported taking longer trips to catch the same amount of vermillion snapper (in anticipation of the aggregate quota being met early) and black sea bass during the 2009 seasons. Fishermen *are beginning to experience* increased costs due to anticipated closures affecting the distance and length (in days) of their trips.

Factors possibly affecting snapshots of a catch share SASG fishery

Would shorter trips (fresher fish) and flexibility in responding to market needs under a catch share result in price increases in the SASG fishery?

In general, fishermen working under anticipated closures tend to have limited capability to time their catch to maximize prices. *Fishermen in the South Atlantic reported that they have recently experienced negative effects of such closures on price*.

"Every year we see the price of black sea bass fluctuate between $1/lb and $6/lb. We could definitely take advantage of this price fluctuation if we timed our fishing – at a minimum so that it occurred when the New England draggers were not catching these fish" (South Atlantic fisherman, 2010)

"In late January, all of the fishermen were landing b-liners. The price would have probably dropped more if the Gulf supply had not been down at the same time. Still, we saw a slight decrease from about $3.00 to $2.75 (approximately 10%) in price as a result of the number of b-liners being landed at the same time" (South Atlantic fisherman, 2010)

Factors possibly affecting snapshots of a catch share SASG fishery

Would a catch share result in increased annual catch limits (ACLs) and landings over time?

Recent research might suggest that aligned incentives, increased monitoring and improved data capture will lead to increased ACLs (and subsequent landings) over time. However, we have built our models with the assumption that total landings will be equal under the two management regimes.

"The total landings for black sea bass may be the same under catch shares but I have lost 50% of my revenue because I must now choose between running my charter boat or commercial fishing. After over twenty years in the fishery, I don't understand why the fishery will only be open in the summer" (South Atlantic fisherman, 2010)

Questions about designing a catch share to meet the needs of the SASG fishery

Could a catch share be designed to ensure access at critical times to vessels with histories of low landings?

Yes. Outside of the SASG fishery, CapLog and others are currently working on several concepts to ensure that groups of fishermen and communities have sufficient and improved access to needed quota. These concepts include permit / quota banks for specific communities and gear types, strategies for collective management of pooled quota (e.g., fishermen's mutual fund), and adaptive management / set-aside programs for specific purposes.

Are there tools to ensure access to the fishery for new entrants and smaller scale vessels?

Yes. NOAA / NMFS has a proven, successful low-interest program for new and smaller-scale fishermen in catch share fisheries (operational for over ten years in Alaska). Regional councils can request an extension of this program for their catch share fisheries.

Additionally, CapLog and others are currently working with local banks in several different regions to appreciate the value of quota as collateral and with fishermen to refine their business cases for local financing. Banks are interested in lending when they understand the lower risks and potential for return in these fisheries.

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