Comparison of the Economic Impact of the Striped Bass, Red Drum and Speckled Trout Fisheries by Sector in the South Atlantic

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The fisheries for striped bass, spotted seatrout and red drum are very economically important to the state of North Carolina (NC). Collectively, these three species account for a large proportion of all recreational fishing trips taken in NC. Currently House Bill 353, Designation of Coastal Gamefish, seeks to reallocate 100% of the allowed harvest of these three stocks to the recreational sector. This short analysis examines the current economic impacts of each sector. Table 1 includes the recreational effort, expenditures and impacts for these three species.

Table 1. Recreational Effort, Expenditures and Economic Impacts, in Thousand of 2009 Dollars.[1]

Species	Fishing Mode	Directed Effort		Expenditures	Impact		
		Non-Resident	Resident	Total	Output	Income	Jobs
Striped Bass	Charter Boat	2,600	1,221	$978.5	$1,458.4	$464.4	19
	Private Boat	20,489	82,553	$5,198.8	$7,748.1	$2,467.3	99
	Shore	24,735	23,132	$5,987.9	$8,924.1	$2,841.8	114
Speckled Trout	Charter Boat	4,296	2,017	$1,616.7	$2,409.5	$767.3	31
	Private Boat	70,066	282,298	$17,777.9	$26,495.4	$8,437.1	337
	Shore	61,072	57,117	$14,784.8	$22,034.6	$7,016.6	280
Red Drum	Charter Boat	10,235	4,804	$3,851.4	$5,739.9	$1,827.8	73
	Private Boat	51,154	206,101	$12,979.3	$19,343.9	$6,159.8	246
	Shore	73,715	68,941	$17,845.4	$26,596.1	$8,469.2	338
Columns Do Not Sum Due to Trips Targeting or Catching Multiple Species							
	Total	**253,077**	**573,529**	**$64,613.5**	**$96,297.3**	**$30,664.5**	**1,225**

In 2009 anglers in the NC took 154,730 striped bass fishing trips, 476,866 spotted seatrout fishing trips and 414,950 red drum fishing trips for a total of 826,606 trips across all three species (Table 1).[2] This total effort includes trips where anglers caught and/or targeted these three species. Expenditure estimates, taken from NMFS estimates from 2006, were inflated to 2009 dollars using the consumer

[1] A previous version of this document contained a coding error that resulted in slightly higher recreational effort estimates. In the interest of being more accurate and more conservative with the recreational estimates, this report was amended on 5/3/2011.

[2] Directed effort estimates were calculated using raw MRFSS data and effort estimates with code developed by GCG. Individual species effort estimates are higher than the sum of all three species due to trips taken that targeted or caught multiple species. That is, a trip where an angler caught red drum and spotted sea trout or trip were an angler caught red drum but was targeting trout would generate a trip for red drum AND a trip for spotted sea trout. While appropriate to include these trips when discussing individual species, it is inappropriate to double count these trips in the total estimates. Overall, 188,570 trips were dropped from the total due to overlap.

price index and applied to the effort estimates.[3] Spending across all three species totals $64.6 million in the state of NC. This level of expenditures supports $96.3 million in total sales, $30.7 million in income and 1,225 jobs. Clearly, recreational fishing for these species is very important economically to the state of NC. While not counted here, recreational striped bass fishing on the east coast for the same striped bass caught in the NC fishery is an even larger economic engine. NC has a strong tackle manufacturing and boat building industry that benefits from a strong and healthy striped bass stock, east coast wide.

In comparison to commercial fisheries for these species, recreational fishing for striped bass alone generates more economic activity ($12.1 million in expenditures) than commercial fishing for all three species combined ($1.6 million in landings) (Table 2). The commercial fishery lands 194,348 pounds of red drum, 320,336 pounds of spotted seatrout and 310,613 pounds of striped bass. The $1.6 million in landings across these species generates $1.5 million in sales, $722,700 in income and 29 jobs across the harvesting sector. This represents only 1.5% of the activity generated by recreational fishing for these same species.[4] Additionally, income impacts have been used as a proxy for economic value, although a proxy that typically overestimates true economic value.[5] Using income as a proxy for economic value, the recreational fishery supports over 42 times more value that the commercial harvesting sector.

Table 2. Commercial Landings and Harvester Economic Impacts, 2009 (thousands of dollars).[6]

Species	Landings		Harvesting Impacts		
	Pounds	Value	Sales	Income	Jobs
Red Drum	194,348	$316.1	$289.6	$143.4	6
Spotted Seatrout	320,336	$529.0	$484.8	$240.1	10
Striped Bass	310,613	$747.3	$684.8	$339.2	13
Total	**825,297**	**$1,592.4**	**$1,459**	**$723**	**29**

From a commercial fisheries standpoint, these species do not appear to be very important to the viability of commercial fishing communities. There is no directed fishery for red drum and red drum constitutes a small portion of overall commercial landings.[7] Currently landings are bycatch in the southern flounder estuarine gill net fishery. In 2005, only 691 commercial fishermen landed a red drum and only 216 of those make more than $200 from red drum harvest. For striped bass, the highest value commercial fishery of the three, only 614 fishermen landed striped base in the estuary fishery and only 201 fishermen landed fish in the ocean fishery. Across both fisheries, only 68 fishermen earned more

[3] Gentner, B. and S. Steinback. 2008. The Economic Contribution of Marine Angler Expenditures in the United States, 2006. US DOC. NOAA Technical Memorandum NMFS/-F/SPO-94 http://www.st.nmfs.noaa.gov/st5/publication/marine_angler.html

[4] It is important to point out that economic impacts are not the appropriate metric for establishing allocations, but can be an important tool to examine the potential distributional impacts of potential shifts in allocation. Economic impacts are a good indicator of potential value in each fishery and can indicate which direction allocations should move.

[5] Edwards, S.F. 1990. An Economics Guide to Allocation of Fish Stocks between Commercial and Recreational Fisheries. NOAA Technical Report NMFS 94. November; and Kirkley, J.E., K.E. McConnell, and W. Ryan. 2000. Economic Aspects of Allocating Striped Bass among Competing User Groups in Virginia. Virginia Sea Grant Technical Report VSG-00-08

[6] NMFS online landings queries - http://www.st.nmfs.noaa.gov/st1/commercial/index.html

[7] NC Red Drum Fishery Management Plan http://www.ncdmf.net/download/RDFMP-FINAL11-24-08.pdf

than $2,000 a year selling striped bass in 2004.[8] Finally for spotted seatrout, only 921 fishermen landed spotted seatrout and only 105 landed more than $1,000 worth of spotted seatrout in 2008. This suggests that very few, if any, commercial fishermen are dependent on harvests of these three species. Because data on landings by individual fishermen are not available, it is impossible to tell if the passage of this bill will cause any one fisherman to go out of business.

Table 3 includes business downstream from the harvester in the calculation of commercial economic impacts. NMFS's commercial economic impact model used here is currently being updated.[9] Since that model was first developed, the country's reliance on imports has increased and the processing and wholesaling sectors have shrunk. As a result the multipliers used to generate Table 3 are likely too optimistic. Additionally, some of the impacts from seafood sales occur in other states as some of this seafood are sold out of state. As a result, the impacts overstate the total activity generated in NC from the commercial harvest of these three species. Regardless, even including the processing, wholesaling and retail sectors, recreational fishing generates 5.3 time more jobs and 10.3 times more sales than the entire commercial industry from the harvester to the plate.

Table 3. Commercial Economic Impact from Harvesting, Processing, Wholesaling and Retail, 2009.

Species	Industry Impact		
	Sales	Income	Jobs
Red Drum	$1,864.1	$1,003.4	46
Speckled Trout	$3,120.0	$1,679.4	76
Striped Bass	$4,407.6	$2,372.4	108
Total	$9,392	$5,055	229

The estimates of recreational economic impact present in Table 1 are conservative. The NC DMF has estimated higher effort and expenditures for each of these species in fishery management plans produced in previous years. Recreational effort in NC fell dramatically from 2008 to 2009 with 1.5 million less trips in 2009 than 2008 (20.7% drop). Additionally, the per trip expenditure estimate presented in the NC DMF fishery management plans are higher than the expenditure means produced by NMFS as NMFS tends to be very conservative when estimating recreational expenditures (footnote 2 and 6). It is a common analytical procedure to conduct a least-most conservative analysis (footnote 4). Here the most conservative recreational estimates are presented alongside the least conservative commercial estimates. Even still, the results of this comparison are compelling; recreational economic activity dwarfs commercial economic activity in these three fisheries.

Just comparing recreational trip expenditures to commercial landings shows that recreational fishing produces far more economic activity in the state of NC that commercial fishing by a wide margin. While not directly tied to these three species, durable good expenditures in NC totaled $1.14 billion in 2009 supporting $1.7 billion in total sales and 13,214 jobs. In addition, 72 boatbuilding businesses in NC

[8] NC Fishery Management Plan: Estuarine Striped Bass. http://www.ncdmf.net/download/StrBassFMP2004.pdf
[9] Fisheries Economics and Sociocultural Status & Trends Series.
http://www.st.nmfs.noaa.gov/st5/publication/index.html

generated $556.8 million in sales supporting 2,903 employees in 2008.[10] Clearly, recreational fishing and the businesses that support recreational fishing are very important to the NC economy. Additionally, NC has the real potential to become an economic powerhouse for inshore fishing, like Florida (FL). By creating gamefish status for some of the same inshore specie with their net ban, FL has created a state where fishing generates $16.6 billion in recreational expenditures annually, supporting 130,900 jobs. NC already has a strong tourism industry and giving these three species gamefish status has the potential to increase recreational fishing effort. Increasing recreational fishing effort will create more jobs at no expense to the state of NC.

[10] National Marine Manufacturer's Association. 2008. Recreational Boating Statistical Abstract. http://www.nmma.org/statistics/publications/statisticalabstract.aspx