

Recreational Landings of Black Sea Bass

Introduction

In 2003, the Southeast Data, Assessment and Review (SEDAR) benchmark assessment of the black sea bass stock in the South Atlantic indicated the stock was overfished and undergoing overfishing. The South Atlantic Fishery Management Council (Council) implemented a rebuilding plan for black sea bass with Amendment 13C in 2006. Amendment 13C also changed the start of the black sea bass recreational fishing year from January 1 to June 1. In 2011, the recreational black sea bass fishery was closed for meeting its quota for the first time. It was first closed in February for meeting the 2010/2011 recreational fishing year quota, and again in October for meeting the 2011/2012 recreational fishing year quota. The recreational fishery was closed again in September of 2012 for meeting the 2012/2013 fishing year quota. The Council has discussed changes to the black sea bass fishing year to possibly extend the season or allow fishing during times of the year that have been closed to recreational fishing for the past several years. This document analyses the recreational landings by wave in order to help the Council and the Snapper Grouper Advisory Panel (SG AP) determine an appropriate start time for the recreational black sea bass fishery.

Methods

The data for this analysis were obtained from a dataset sent to Council staff from the Southeast Fisheries Science Center (SEFSC) in October of 2012. All the landings for black sea bass are given in pounds whole weight and they have been post-stratified to exclude all landings north of Cape Hatteras, NC. The MRIP modes included in these landings are charterboat, headboat, private, and shore. The private and shore modes were combined into Private landings. The charterboat and headboat modes were combined into For-Hire landings.

Some years of data had to be omitted for various reasons. All data prior to 1997 was omitted because the headboat landings were not broken down by wave. They were simply reported for the year. Data from 2012 were omitted because they were incomplete and what was available is still considered preliminary. Also, 2011 data were omitted because of the closures that happened, first in February and again in October. This left a dataset comprised of years from 1997 through 2010.

The factors analyzed included wave (MRIP waves 1-6), state (FL, GA, NC, SC), and mode (For-Hire and Private). Landings data were summarized for each year by wave, by wave/state, by wave/mode, and by wave/state/mode. Average landings per wave were calculated for state, mode, and state/mode.

The data were also separated into years when the fishing season started on January 1 and those years when the fishing season started on June 1 in order to see if the average landings within a wave changed significantly with the change of the fishing season start date. There were 12 datasets, 2 for each wave. An F-test and a 2-sided t-test were performed on the datasets for each wave. The F-test was to examine whether the variances were the same between the 2 datasets, therefore informing the style of t-test necessary to check if the averages were significantly different.

Results and Discussion

Results of the F-tests and t-tests showed that there was no significant difference between the average landings per wave for those data collected during a fishing season that started on January 1 versus a fishing season that started on June 1 (p values between 0.39 and 0.92 for all waves). Therefore, all years (1997-2010) were used to calculate the average landings by wave for all the factors examined.

Examination of the average landings per wave across all states and modes shows that wave 3 (May-June) has the highest average landings, followed by wave 4 (July-August) and then wave 2 (March-April; Table 1, Figure 1). Waves 1, 5, and 6 are much lower than the rest and they are all relatively similar in magnitude. Analysis of the average landings by wave and mode shows little difference between the two modes, except that the Private mode exhibits a large upswing in average landings for wave 6 that does not occur in the For-Hire mode (Table 2, Figure 2). Both modes have their highest average catches during waves 2, 3, and 4.

For the individual states, NC and SC show very similar patterns of average landings by wave (Table 3, Figure 3). Both states start out with low average landings in wave 1, ramp up in wave 2, and hit their peak in wave 3. At this point, SC average landings begin to steadily decline until wave 6, whereas NC average landings remain high in wave 4 before dropping rapidly in wave 5 and remain low in wave 6. GA and FL do not show much of a trend in average landings by wave at all (Table 3, Figure 3). For GA, the only wave that shows any real difference from the others is wave 1 (January-February), where the average landings are less than 500 lbs ww. Otherwise, the rest of the waves have average landings very similar to one another. FL has no trend in the average landings by wave. Average landings just fluctuate around a mean value from wave to wave. It should be noted that NC and SC have the largest average landings by wave and they both show the same trend in average landings by wave. Therefore, the trend in the total average landings by wave is most likely driven by the trend in NC and SC landings.

When the landings are broken down by state and mode, we again see that the trend between the For-Hire mode and the Private mode is very similar within each state (Table 4, Figure 4). We again see a large upswing in landings for the Private mode in wave 6 (November-December) that does not occur in the For-Hire mode in all states. Also, the trends in the modes within states are very similar to the overall trend in the state average landings.

Tables

Table 1. Average recreational black sea bass landings by wave for 1997-2010 in lbs ww. Data from SEFSC.

Wave	Average Landings
1	40,782
2	118,992
3	163,119
4	155,991
5	66,139
6	82,012

Table 2. Average recreational black sea bass landings by wave and fishing mode for 1997-2010 in lbs ww. Data from SEFSC.

Wave	For-Hire	Private
1	9,857	30,926
2	49,137	69,855
3	86,926	76,193
4	89,040	66,951
5	36,649	29,490
6	14,637	67,375

Table 3. Average recreational black sea bass landings by wave and state for 1997-2010 in lbs ww. Data from SEFSC.

Wave	FL	GA	NC	SC
1	28,685	463	10,526	1,108
2	27,906	16,598	33,221	41,267
3	26,601	19,075	58,641	58,802
4	40,409	13,860	58,813	42,910
5	14,242	5,915	24,004	21,978
6	25,254	13,129	19,618	24,011

Table 4. Average recreational black sea bass landings by wave, state, and fishing mode for 1997-2010 in lbs ww. Data from SEFSC.

Wave	FL		GA		NC		SC	
	For-Hire	Private	For-Hire	Private	For-Hire	Private	For-Hire	Private
1	6,979	21,706	463	0	1,307	9,220	1,108	0
2	9,260	18,646	9,890	6,708	12,600	20,622	17,388	23,879
3	7,696	18,905	9,411	9,664	34,480	24,161	35,339	23,463
4	12,367	28,042	7,630	6,230	35,141	23,673	33,903	9,007
5	5,386	8,856	4,144	1,771	13,002	11,002	14,118	7,860
6	5,855	19,398	2,585	10,545	1,613	18,004	4,584	19,428

Figures

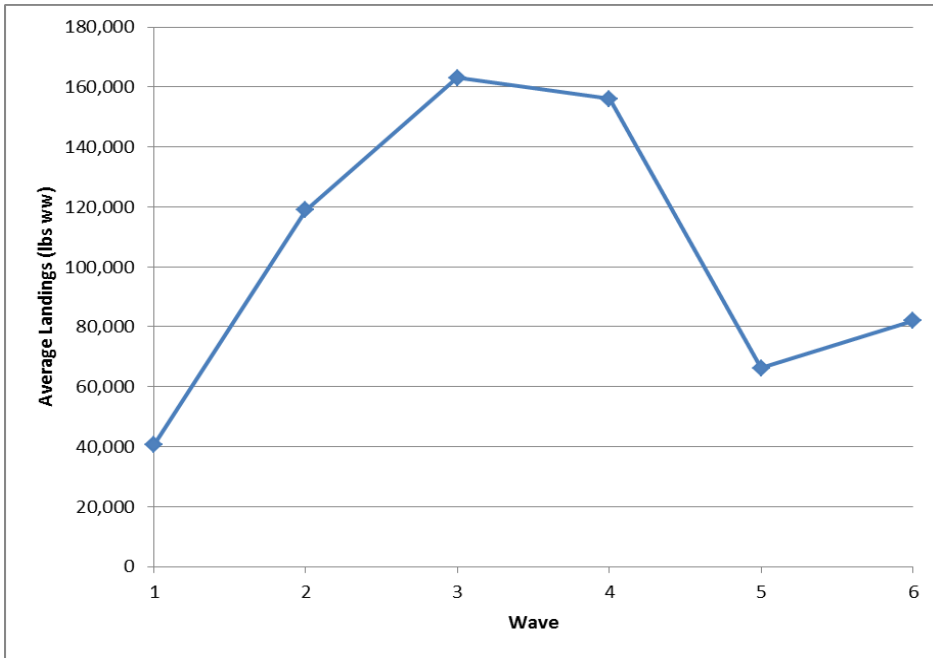


Figure 1. Average recreational landings of black sea bass by wave for 1997-2010 in lbs ww. Data from SEFSC.

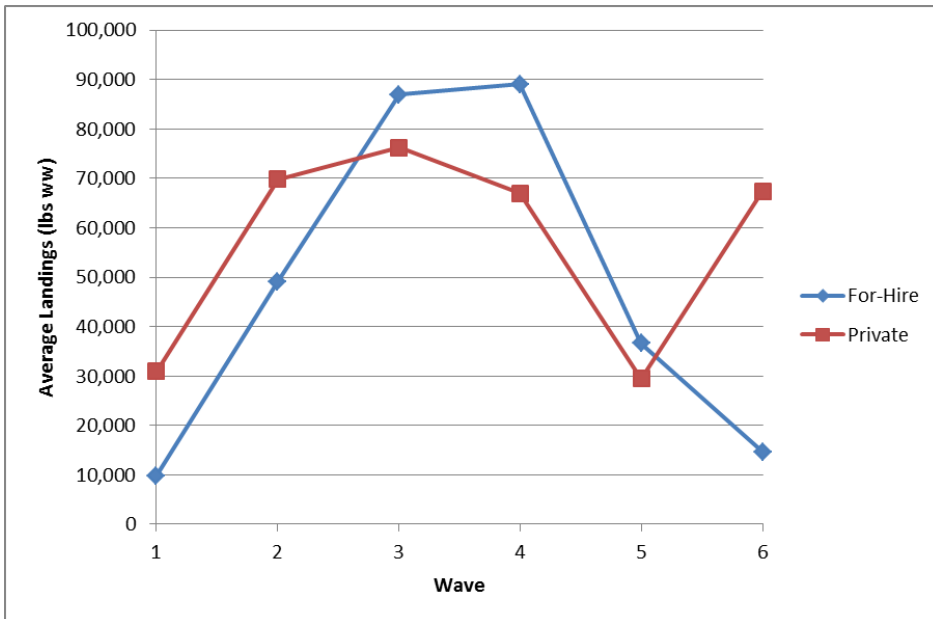


Figure 2. Average recreational black sea bass landings by wave and fishing mode for 1997-2010 in lbs ww. Data from SEFSC.

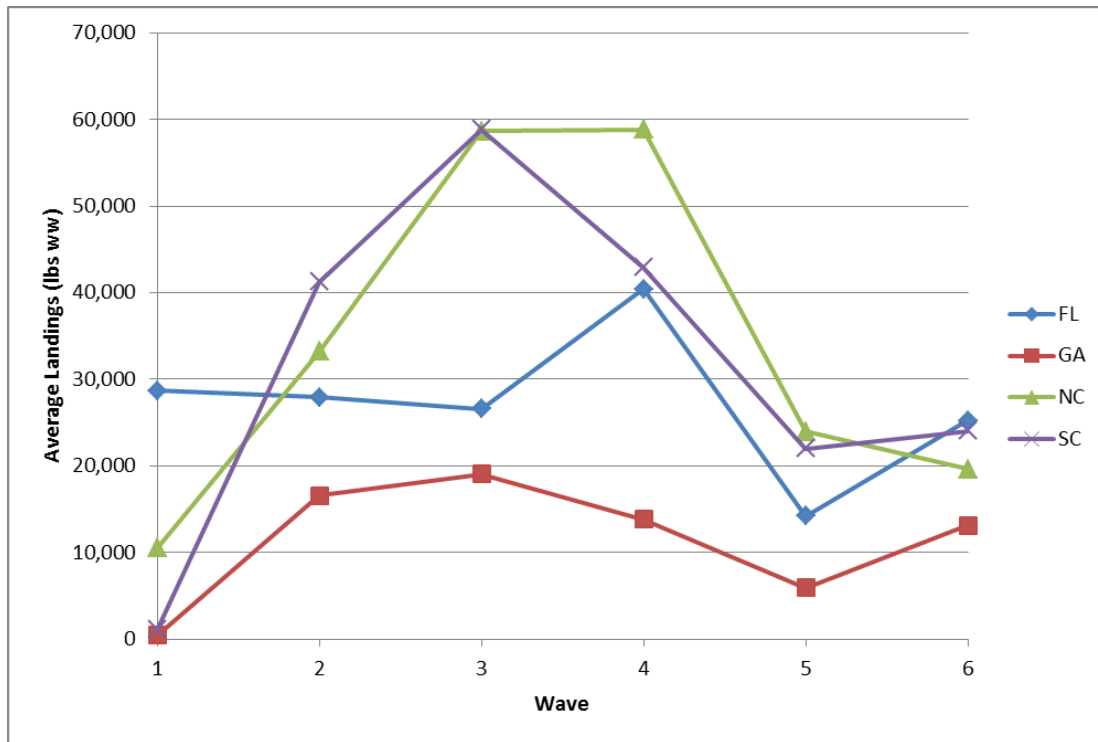


Figure 3. Average recreational landings of black sea bass by wave and state for 1997-2010 in lbs ww. Data from SEFSC.

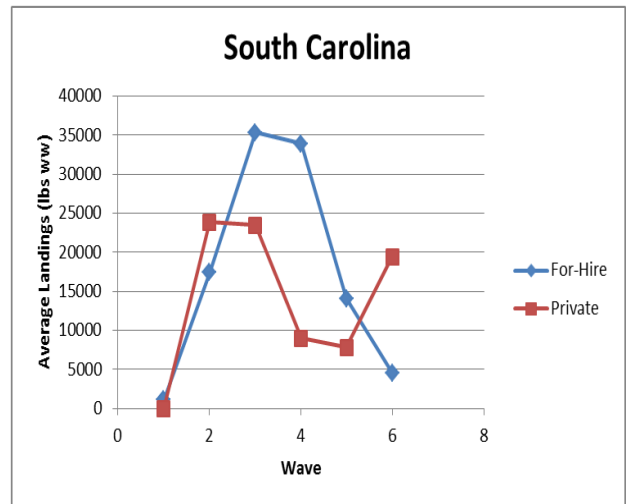
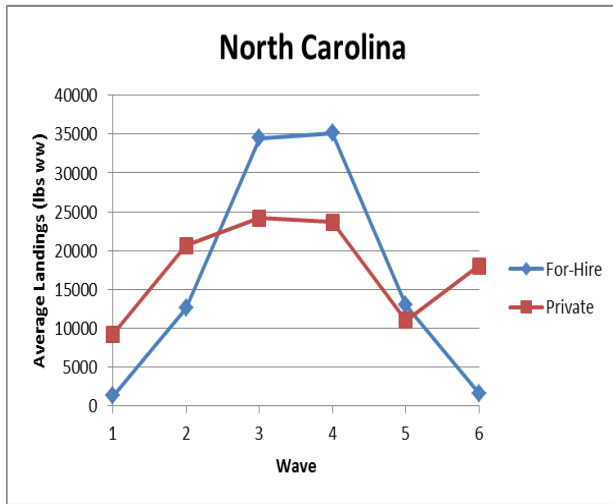
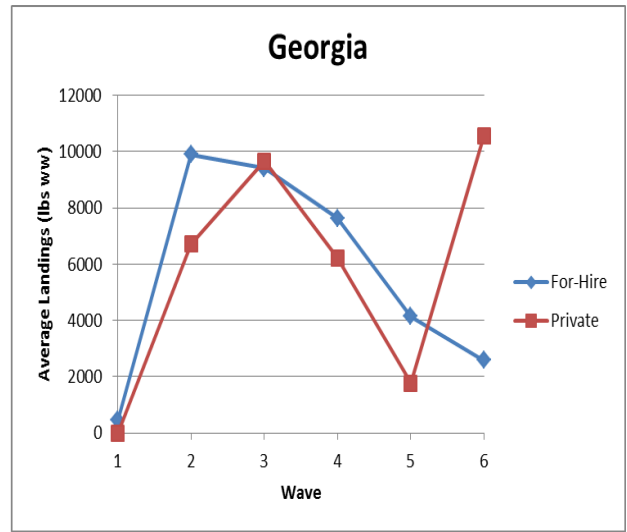
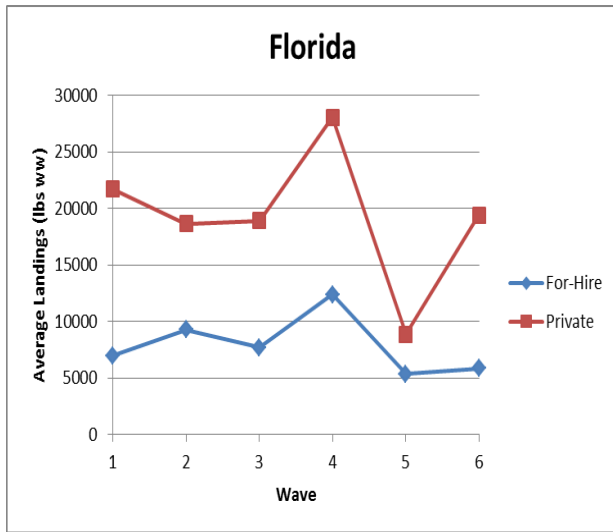


Figure 4. Average recreational black sea bass landings by wave, state, and fishing mode for 1997-2010 in lbs ww. Data from SEFSC.