Appendix L. Blueline Tilefish Recreational Trip Limit Analysis

South Atlantic blueline tilefish are overfished and undergoing overfishing (SEDAR 32 2013). The South Atlantic Fishery Management Council (Council) is developing Amendment 32 to end overfishing and rebuild the stock. Analyses were requested to assess the effects of recreational bag and trips limits. **Action 8** in Amendment 32 establishes recreational management measures for blueline tilefish. This analysis looks at **Alternatives 3-8** in **Action 8**:

Alternative 3. Establish a bag limit of blueline tilefish of 1/person/day.
Alternative 4. Establish a vessel limit of blueline tilefish of 1/vessel/day.
Alternative 5. Establish a vessel limit of blueline tilefish of 1/vessel/day May through August and no retention during the remainder of the year.
Alternative 6. Establish a vessel limit of blueline tilefish of 1/vessel/day year during May and June with no retention during the remainder of the year.
Alternative 7. Establish a vessel limit of blueline tilefish of 1/vessel/day during May with no retention during the remainder of the year.
Alternative 8. Establish a vessel limit of blueline tilefish of 1/vessel/day during June with no retention during the remainder of the year.

The South Atlantic Council's Scientific and Statistical Committee recommended an acceptable biological catch (ABC) of 36,359 lb ww for blueline tilefish, with the recreational sector allocated 49.93% (18,154 lb ww). This analysis uses the Council's preferred annual catch limit (ACL) alternative of 98% of the ABC (17,791 lb ww) for assessing the effects of various bag and trip limits. All results are in pounds whole weight. Blueline tilefish is currently in the aggregate grouper bag limit of 3/person/day. The aggregate group contains the following species: gag, black grouper, snowy grouper, misty grouper, red grouper, scamp, yellowedge grouper, yellowfin grouper, yellowmouth grouper, blueline tilefish, golden tilefish, sand tilefish, coney, graysby, red hind, and rock hind. Alternatives 5 through 8 were added to Amendment 32 during the June 2014 Council meeting in order to match alternatives suggested for snowy grouper. Based on Council recommendation, the analyses were compiled using 2013 recreational trip level information since the fishery was closed beyond depths of 240 feet in 2011 and part of 2012. Landings and season lengths resulting from various bag and trip limits were then projected to determine when the recreational sector would close, the percent of the ACL caught, and how long the season would remain open. Sensitivity runs were also performed using more recent data from 2014 as landings during January-February 2013 were unusually high compared to other more recent years.

Methods

Bag and trip limit analyses were conducted to evaluate reductions in overall harvest of blueline tilefish resulting from various bag or trip limit regulations. Headboat Survey (HBS) and Marine Recreational Information Program (MRIP) catch-effort data were used to conduct bag and trip limit analyses. Data were analyzed by mode, and bag and trip limit changes were calculated on a per-month (HBS) or per wave (MRIP) basis. For MRIP data, waves were split proportionally into months for projecting landings. MRIP and HBS landings data for 2013 and

2014 (Jan-Apr) were used to predict closure dates. Bag and trip limit changes in harvest followed the methodology used in Gulf Reef Fish Amendment 37 (SERO LAPP 2012-03). For all analysis, whenever the trips per month/wave was < 3 or the number of fish landed was < 30, that time period was aggregated with the time periods surrounding it (e.g. Wave 2 had less than 30 fish caught, so it was combined with Waves 1 and 3 for analyses) to ensure adequate sample sizes were used for analysis.

Results

Reductions associated with various bag and trip limits were compared to the status quo using the Council's preferred ACL alternative (98% of the ABC). The largest reductions were seen in the vessel limits for all modes (**Table L-1**), particularly for vessel limits that also included a reduced fishing season. The bag limit reductions were largest for private anglers, followed by headboats and charter boats.

The alternative that resulted in the greatest percentage of the ACL landed was the 1 blueline tilefish per vessel per trip, which also had the longest season (**Table L-2**). The bag limit, while projecting 97% of ACL would be landed, had a shorter season that closed in January. Vessel limits that included a short open season (May – Jun, May only, and June only) resulted in very low projected landings and a small portion of the ACL being caught.

Table L-1. Projected reductions of blueline tilefish landings by month for various alternatives for a) HBS, b) MRIP private, and c) MRIP charter. Warmer colors denote higher reductions.

A) Headboat Survey

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1/person/day	55%	55%	27%	27%	58%	58%	63%	63%	88%	88%	78%	78%
1/vessel/day	99%	99%	97%	97%	99%	99%	99%	99%	99%	99%	99%	99%
1/vessel/day (May –Aug)	100 %	100 %	100 %	100 %	99%	99%	99%	99%	100 %	100 %	100 %	100 %
1/vessel/day (May –Jun)	100 %	100 %	100 %	100 %	99%	99%	100 %	100 %	100 %	100 %	100 %	100 %
1/vessel/day (May)	100 %	100 %	100 %	100 %	99%	100 %	100 %	100 %	100 %	100 %	100 %	100 %
1/vessel/day (June)	100 %	100 %	100 %	100 %	100 %	99%	100 %	100 %	100 %	100 %	100 %	100 %

B) MRIP private

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1/person/day	79%	79%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
1/vessel/day	93%	93%	86%	86%	86%	86%	86%	86%	86%	86%	86%	86%
1/vessel/day (May –Aug)	100 %	100 %	100 %	100 %	86%	86%	86%	86%	100 %	100 %	100 %	100 %
1/vessel/day (May –Jun)	100 %	100 %	100 %	100 %	86%	86%	86%	86%	100 %	100 %	100 %	100 %

1/vessel/day (May)	100 %	100 %	100 %	100 %	86%	86%	86%	86%	100 %	100 %	100 %	100 %
1/vessel/day (June)	100 %	100 %	100 %	100 %	86%	86%	86%	86%	100 %	100 %	100 %	100 %

C) MRIP charter

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1/person/day	55%	55%	46%	46%	29%	29%	70%	70%	51%	51%	51%	51%
1/vessel/day	88%	88%	87%	87%	87%	87%	94%	94%	89%	89%	88%	88%
1/vessel/day (May –Aug)	100 %	100 %	100 %	100 %	87%	87%	94%	94%	100 %	100 %	100 %	100 %
1/vessel/day (May –Jun)	100 %	100 %	100 %	100 %	87%	87%	100 %	100 %	100 %	100 %	100 %	100 %
1/vessel/day (May)	100 %	100 %	100 %	100 %	87%	100 %	100 %	100 %	100 %	100 %	100 %	100 %
1/vessel/day (June)	100 %	100 %	100 %	100 %	100 %	87%	100 %	100 %	100 %	100 %	100 %	100 %

Table L-2. Estimated projected closures and landings based on 2013 data.

	Projected Closure date	Projected Days Open	Projected Landings (ww)	Percentage of ACL
Status quo	Jan – 5	4	17,791	100%
1/person/day	Jan – 26	25	17,791	100%
1/vessel/day	Jul – 15	195	17,791	100%
1/vessel/day from May – Aug	Sep – 1	123	14,397	80.9%
1/vessel/day from May –Jun	Jul – 1	61	579	3.3%
1/vessel/day in May only	Jun – 1	31	293	1.6%
1/vessel/day in June only	Jul – 1	30	287	1.6%

In 2013, very high landings were reported in Wave 1 that may not be representative of future landings (**Table L-3**). A sensitivity analysis was conducted using the 12 most recent months of data available (**Table L-4**). This included MRIP landings from the ACL datasets for waves 1 and 2 from 2014, and all remaining data was from 2013. The sensitivity analysis lengthened the season length for the 1 blueline per person per day and 1 blueline per vessel per day alternatives, but had no effect on the other alternatives because they are proposed to be closed during wave 1. Under this sensitivity run, both the 1 per person and 1 per vessel alternatives result in the ACL being caught, with the vessel limit having the longer season length. In comparison to the status quo, this would extend the season length by 100 days with the 1 per person limit and 210 days under the 1 per vessel limit.

Table L-3. MRIP landings from the ACL database over time.

Year	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
2014	4,548	18,089	NA	NA	NA	NA
2013	178,302	5,905	4,366	108,849	4,027	43,024
2012	388	3,300	33,190	27,886	19,609	7,711
2011	2,797	326	6,195	26,492	9,084	166
2010	11,453	12,596	30,297	6,293	6,570	3,675

Table L-4. Estimated projected closures and landings using 2014 data for MRIP waves 1 and 2, and 2013 data for all other months/waves.

	Projected Closure date	Projected Days Open	Projected Landings (ww)	Percentage of ACL
Status quo	Apr – 4	93	17,791	100%
1/person/day	Jul – 13	193	17,791	100%
1/vessel/day	Oct – 31	303	17,791	100%
1/vessel/day from May – Aug	Sep – 1	123	14,397	79.3%
1/vessel/day from May –Jun	Jul – 1	61	579	3.3%
1/vessel/day in May only	Jun – 1	31	293	1.6%
1/vessel/day in June only	Jul – 1	30	287	1.6%

Additional information with respect to discards and the bag limit analysis

Using the MRIP website effort queries, we compared the number of trips that caught and landed blueline tilefish to the number of trips that were targeting blueline tilefish as its primary species. In 2013, 83% of all trips catching blueline tilefish were targeting blueline tilefish. This value is variable though when looking at data since 2006, with an average of 37% of the trips targeting blueline tilefish. According to the stock assessment (SEDAR 32 table 2.11) the number of recreational blueline tilefish discarded was low with 12% discarded in 2010 and 3% discarded in 2011. The MRIP website gives an estimate of 1,345 (5%) and 1,200 (2%) blueline tilefish discarded in 2012 and 2013, respectively. Discards would vary depending on whether fishermen continued to target blueline tilefish after their limit was caught or during the closed portions for each alternative. In 2011, during the 240 ft closure, there were reduced discards, which may imply that fishermen were not actively targeting blueline tilefish. This may be an indication that once the season closes or the bag limit is reached fishermen may cease to target blueline tilefish, which would limit the discards. The maximum discards that could be expected would be the differences between the alternatives and the status quo. With the high projected reductions for some alternatives, increased discards should be considered when choosing an alternative.

References

NMFS (2012). SERO-LAPP-2012-03: Gulf Gray Triggerfish Decision Tool Report, 18pp.