

Blueline Tilefish Interpolated Projections

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At their April 2014 meeting, the South Atlantic SSC reviewed landings projections for blueline tilefish from SEDAR 32. They were presented with projections using 2013 general recreational landings provided from the Science Center and 2013 landings that were an imputed average of landings from 2010 and 2012 (Tables 1-2). This was due to the fact that the landings in 2013 were an order of magnitude higher in 2013 than they were in previous recent years. Also, the landings of blueline tilefish are typically driven by landings north of Cape Hatteras, NC. However, the spike in recreational landings in 2013 is driven by landings in FL. These factors indicate there may be an issue with the 2013 landings provided by the Science Center, so the imputed average of 2010 and 2012 was used for comparison.

After much deliberation, the SSC decided to use the landings estimate for the general recreational fleet generated by MRIP in the projections for ABC and OFL (Tables 1-2). It was determined that the trend line of the new projections would fall between the two projections already available since all other landings and discards would remain constant, and since the MRIP landings are intermediary between the Science Center estimate and the imputed average. In the essence of time, and since all other data is unchanged, it was decided to simply interpolate the new projections using the new level of landings from MRIP and the already available projections presented to the SSC during the April 2014 meeting. The methodology for this interpolation is described below.

Methodology for Interpolation of Projections

Originally, the interpolation was to be kept simple and the mean or median value between the projections using the Science Center provided landings and the imputed average was going to be used as the interpolated projections. However, we had an estimate of landings from MRIP in 2013, which could help scale the interpolated projections within the space between the Science Center projections and the imputed average projections. Therefore, it was decided to use this piece of information that was available to give a more informative interpolation of the projected landings.

The first approach was to take the percentage that the MRIP landings are of the Science Center landings and then carry that through the projections. So I first determined the percentage that the MRIP landings were of the Science Center landings (~79%). Then, when interpolating the projections, I made the MRIP projections ~121% of the Center projections. This is because lower initial landings in 2013 lead to higher projected landings during the projection period. However, this caused the trend in the interpolated projections to change from the trend in both the Science Center and the imputed average projections (Figure 1).

In order to remedy this issue, I decided to hold the percent difference between the MRIP landings and the Center landings, as a percentage of the difference between the Center landings and the imputed average, constant through the projections. This preserved the trend in the projection line, causing it to

follow the same trend in the Center projection and the imputed average projection (Figure 2). Tables 1 and 2 have the landings used for projections in 2013 and 2014, and the projected values for landings and discards from 2015-2018 in both lbs. whole weight and numbers of fish.

Table 1. Projections for the ABC at P*=0.3. 2013 and 2014 were input landings and 2015-2018 are projection years. SEFSC are the projections using the general recreational landings estimates provided from the Southeast Fisheries Science Center, Imputed Avg are the projections using the imputed average general recreational landings from 2010 and 2012, and MRIP are the projections using general recreational landings estimates from the MRIP website. The SSC's recommendation for ABC are the MRIP values.

Year	ABC Landings lb ww			ABC Discards lb ww			ABC Landings num fish			ABC Discards num fish		
	SEFSC	Imputed Avg	MRIP	SEFSC	Imputed Avg	MRIP	SEFSC	Imputed Avg	MRIP	SEFSC	Imputed Avg	MRIP
2013	556,018	317,116	491,642	8,277	8,277	8,277						
2014	224,100	224,100	224,100									
2015	28,546	57,541	36,359	31	62	39	6,355	11,474	7,734	7	12	8
2016	46,238	77,075	54,548	50	83	59	9,530	14,698	10,923	10	16	12
2017	64,768	95,051	72,928	70	102	79	12,593	17,419	13,893	14	19	15
2018	82,189	110,317	89,769	89	119	97	15,249	19,576	16,415	16	21	17

Table 2. Projections for the OFL at P*=0.5. 2013 and 2014 were input landings and 2015-2018 are projection years. SEFSC are the projections using the general recreational landings estimates provided from the Southeast Fisheries Science Center, Imputed Avg are the projections using the imputed average general recreational landings from 2010 and 2012, and MRIP are the projections using general recreational landings estimates from the MRIP website. The SSC's recommendation for OFL are the MRIP values.

Year	OFL Landings lb ww			OFL Discards lb ww			OFL Landings num fish			OFL Discards num fish		
	SEFSC	Imputed Avg	MRIP	SEFSC	Imputed Avg	MRIP	SEFSC	Imputed Avg	MRIP	SEFSC	Imputed Avg	MRIP
2013	556,018	317,116	491,642	8,277	8,277	8,277						
2014	224,100	224,100	224,100								18	
2015	44,271	82,648	54,612	48	89	59	9,885	16,549	11,681	11	22	13
2016	67,118	104,862	77,289	73	113	84	13,943	20,189	15,626	15		17
2017	89,598	124,378	98,970	97	134	107	17,627	23,161	19,118	19	25	21
2018	109,542	140,423	117,863	118	152	127	20,642	25,414	21,928	22	27	23

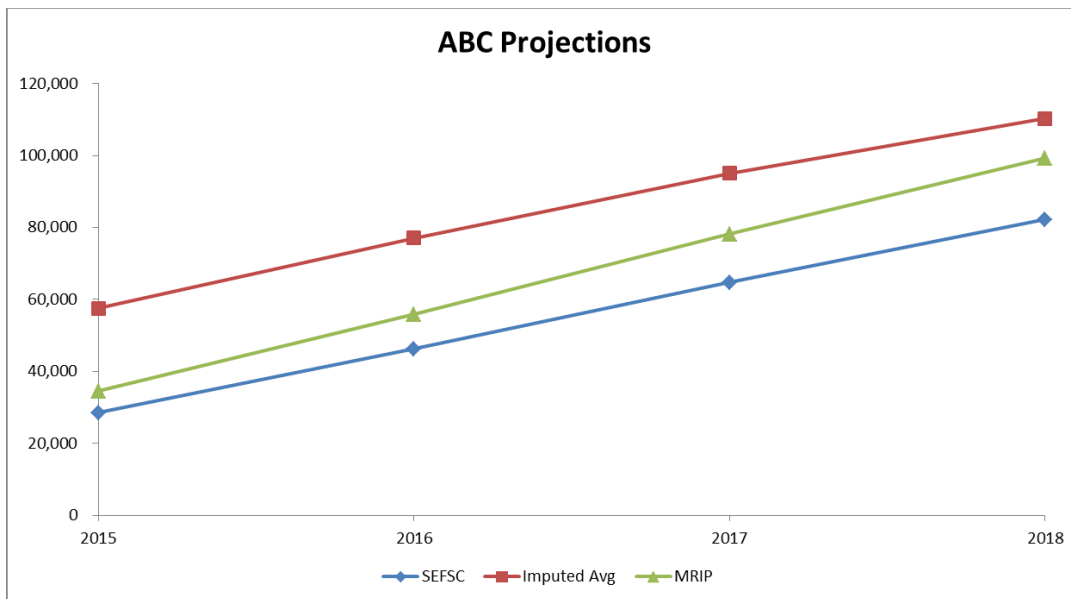
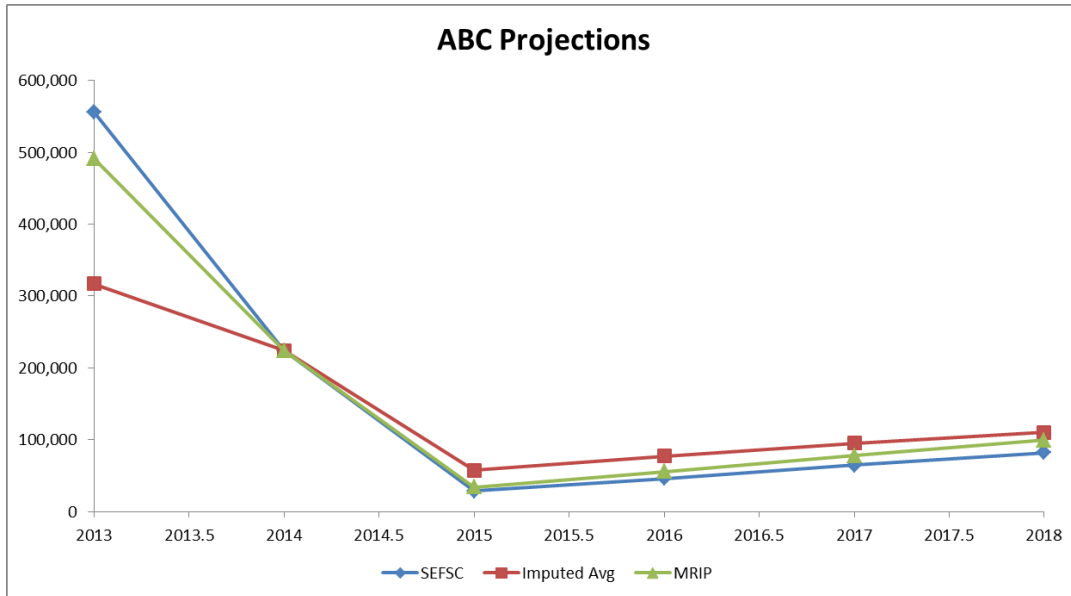


Figure 1. Blueline tilefish landings projections for the ABC. SEFSC are the projections using the general recreational landings estimates provided from the Southeast Fisheries Science Center, Imputed Avg are the projections using the imputed average general recreational landings from 2010 and 2012, and MRIP are the projections using general recreational landings estimates from the MRIP website. Methodology for interpolation holds the MRIP line at a constant percentage of the SEFSC line based on the percentage the MRIP landings are of the SEFSC landings (~121%). The lower panel is a close-up of the projection years, showing that the MRIP line does not have the same trend as the other two projections.

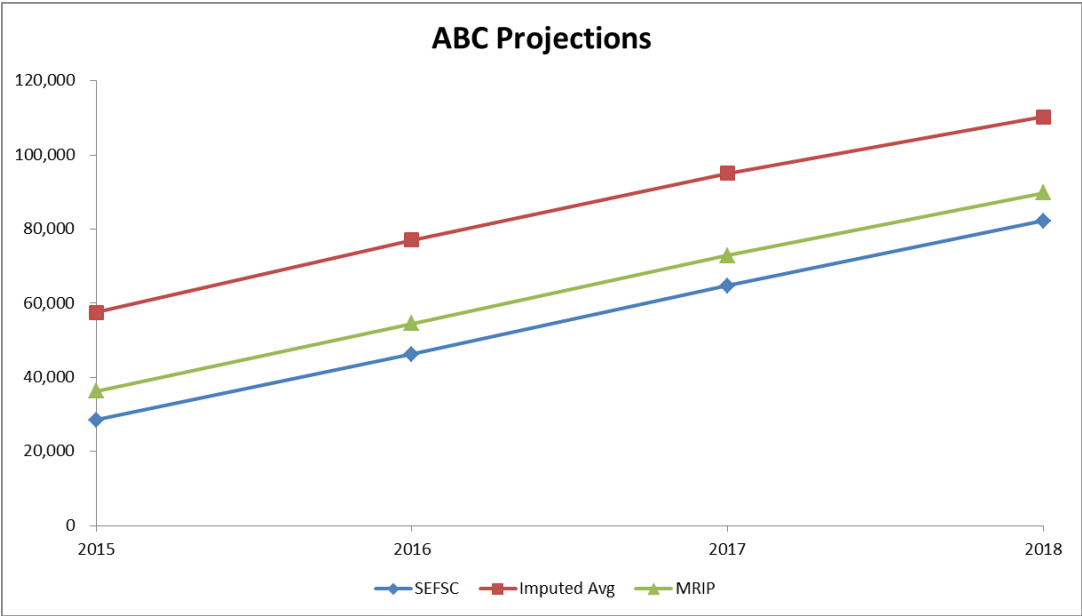
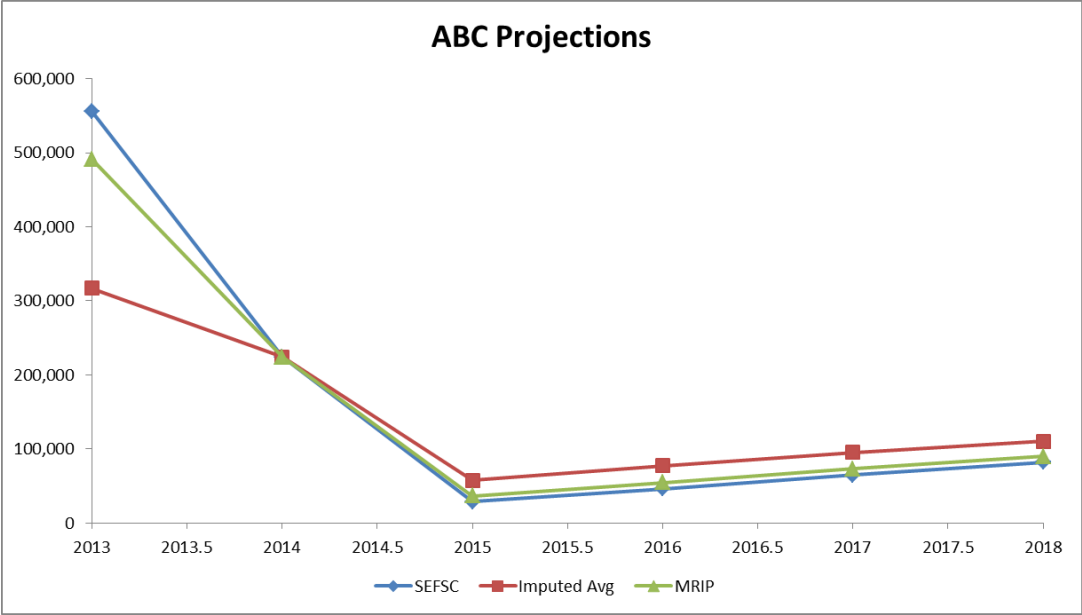


Figure 1. Blueline tilefish landings projections for the ABC. SEFSC are the projections using the general recreational landings estimates provided from the Southeast Fisheries Science Center, Imputed Avg are the projections using the imputed average general recreational landings from 2010 and 2012, and MRIP are the projections using general recreational landings estimates from the MRIP website. Methodology for interpolation holds the difference between the MRIP line and the SEFSC line as a percent of the difference between the SEFSC line and the Imputed Avg line constant over the projections (~27%). The lower panel is a close-up of the projection years, showing that the MRIP line does have the same trend as the other two projections using this methodology.