



Comparison between catch limits and actual catch amount in Pacific Bluefin Tuna.

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Introduction

Pacific Bluefin Tuna (PBF) distributes widely in Pacific Ocean and is mainly caught in the eastern and the western area of North Pacific. The availability and size of fish could be different by the stock condition, area, fish migration, and fisher's behavior. The Joint IATTC and WCPFC-NC Working Group (JWG) meeting on the management of Pacific Bluefin tuna is the substantive group to discuss the resolutions and the management measure for PBF management. Based on the proposals from the JWG, each RFMO adopts the resolution or the management measure by each commission and the resolution and the management measure become operative in each convention area. Since 2014, both RFMOs have introduced strict managements to limit the PBF catch, and the members generally complied with these catch limits.

The difference between the TAC and observed catch is a kind of the implementation error in the context of the stock assessment (projection) or the Management Strategy Evaluation (MSE), which has been developed by the PBFWG. To consider the possibility of the implementation error, its magnitude and the direction (overage or underage), the ISC PBFWG needs to review the relationship between the observed catch amount and the catch upper limits in recent years.

In this document, the authors summarized the observed catch amount and the catch upper limits for main PBF fishing nations since 2015.

Method

Observed catch amount of PBF were summarized from the public domain data submitted to IATTC and delegation papers from the JWG and WCPFC northern committee (NC). Since the catch statistics are often updated in the later years, the authors used the latest report in this case. Total allowable catch (TAC) amounts were summarized from the WCPFC conservation management measures and the IATTC resolutions.

WCPFC has the catch limits by country and by size category. IATTC enforces the biannual catch limit for the commercial fisheries and bag limit management for the recreational fishery. The catch limits and catch amounts were summarized by size category for the fisheries in WCPFC area and by fisheries type (commercial and recreational) in IATTC area. Commercial fisheries in IATTC area were also summarized in every 2 years block.

Result

Annual TAC consumption ratio, the TAC and the observed catch amounts were shown in Table 1. There were some excesses in 2016 (Japan), 2016 and 2017 (Korea), and 2015-2016, and 2017-2018 (Mexico), however, these countries cancelled these excesses by releasing the fish from the aquaculture cage or by reimbursing in the following years (Japan: 2017, Korea: 2017-2021, and Mexico: 2016 and 2018 (WCPFC NC 2017, WCPFC NC 2018 and IATTC-WCPFC JWG 2019)).

After WCPFC adopted a management rule to transfer a part of the TAC from small fish category to large fish category with a conversion factor (hereafter transfer provision), some countries in WPO reduced their TAC consumption ratio in small fish category and increased that in large fish category, although there was no clear explanation available how this transfer provision has been implemented in the actual management in WPO. Since 2020, the TAC consumption ratio in large fish category in WPO were increased as the stock recovery and exceeded their original TAC. On the other hand, the TAC consumption ratio in WPO small fish category remained to 86.7% at highest in the same period. We assumed that the observed overage after 2019 in WCPO large fish category could be a catch occurred under the transfer provision, and we calculated the amount of transferred TAC from WPO small fish category to large fish category as well as the TAC consumption ratio (Table 1). With this transfer assumption, TAC consumption ratio in both WPO small and large fish categories were within, but very close to 100% in particular a couple of recent years.

EPO commercial fisheries generally showed a high consumption ratio (average 99.9%) since 2015. Based on those recent observations, the future reported catch will also be close to the catch limit if the stock were maintained in good stock condition.

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Table 1. TAC consumption ratio, TAC and Catch amount by management area and category.

Calendar Year	TAC consumption ratio						TAC (mt)				Catch amount (mt)					
	WPO		WPO with conversion		EPO		WPO		EPO		WPO		WPO with conversion		EPO	
	Small	Large	Small	Large	Commercial	Sport	Small	Large	Commercial	Sport	Small	Large	Small	Large	Commercial	Sport
2015	67.0%	68.0%	-	-	102.4%	-	4725	6591	6600	-	3166	4142	-	-	6757	420
2016	95.5%	80.9%	-	-		-	4725	6591	6600	-	4511	5331	-	-	6757	400
2017	101.6%	81.3%	-	-	106.6%	-	4725	6591	6600	-	4800	5356	-	-	7033	372
2018	50.2%	72.1%	-	-		-	4725	6591		-	2370	4752	-	-		463
2019	76.3%	75.5%	-	-	97.4%	-	4725	6591	6200	-	3606	4978	-	-	6040	535
2020	62.2%	103.6%	65.6%	100.0%		-	4725	6591		-	2937	6830	3099	6591	6040	479
2021	76.6%	105.5%	81.8%	100.0%	93.3%	-	4725	6591	7295	-	3618	6956	3866	6591	6806	750
2022	86.7%	110.3%	98.0%	100.0%		-	4725	7609		-	4096	8394	4630	7609		1248
2023	79.5%	116.0%	97.0%	100.0%	-	-	4725	7609	-	-	3757	8824	4584	7609	3599	1367

WPO has the rules of transfer from small fish to large fish with conversion factor and carry-over from TAC's surplus to next year's TAC. EPO has the biannual TAC defined by resolutions.