**Pacific Bigeye Thresher Shark (Alopias superciliosus)**

**Stock Status & Trends plus Management Advice and Implications**

Contents

[SC13 2017 (Sustainability Risk Assessment) 1](#_Toc505064011)

[Useful References 3](#_Toc505064012)

# SC13 2017 (Sustainability Risk Assessment)

1. **Stock status and trends**
2. **SC13 noted that the results of the assessment indicate that assuming a range of longline post-capture survival rates of 30-70%, which likely reflects current fishing operations, median sustainability risk for the 2000-2014 period ranged between:**
* **20% below to 60% above the MIST based on 0.5r,**
* **50% below to 10% above the MIST based on 0.75r, and**
* **60% to 20% below the MIST based on r.**
1. **SC13 also noted that CPUE increased in the calibration area (the Hawaii-based fleet) in the last year of the assessment. This may suggest an increase in biomass, but the reason for the CPUE increase is not understood.**
2. **Management advice and implications**
3. **SC13 noted that although the stock status of this species is currently unknown, the bigeye thresher assessment showed that, estimating for current fishing operations (with 30-70% post-capture mortality) across a range of scenarios, some of the median F estimates exceeded two of the three indicative reference points (0.5*r* and 0.75*r*) (Table BTH-1). Across all 30-70% post-capture scenarios, there is a >50% probability in most years that F > MIST based on 0.5*r* and a >20% probability in most years that F > MIST based on 0.75*r*. (Table BTH-2).**

**TABLE BTH-1.** Sustainability risk (ratio of impact to MIST, at three levels of the MIST, with values >1 considered to be unsustainable) (median values and 95% quantile range) for bigeye thresher in the Pacific. Estimates are for the Core Area and the Assessment Area assuming the occurrence of post-capture survival (random occurrence between 30% and 70%) in impact estimation and three initial population status assumptions (low (0.3), medium (0.5), and high (0.7)). Results are contrasted for the fifteen-year period (2000-2014) and the recent period (2011-2014). F*crash* = *r*, F*lim* = 0.75*r*, and F*msm* = *r*/2.

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**TABLE BTH-2.** Sustainability risk probabilities (Pr(Impact > MIST), for 3 levels of MIST: F*crash*, F*lim*, and F*msm*) for bigeye thresher in the Pacific, 2000-2014, assuming 100% capture mortality (left) and the occurrence of post-capture survival (right) over the Core Area and the Assessment Area (combined values across three initial population status assumptions). F*crash* = *r*, F*lim* = 0.75*r*, and F*msm* = *r*/2.

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1. **SC13 noted that the modelled scenario of 30-70% post-capture survival reduced F estimates by approximately one third and reduced the risk that the MIST based on *r* will be exceeded by 50% compared to the scenario assuming no post-catch survival. A “no-retention” measure was not modelled but would be expected to reduce F even further.**
2. **SC13 noted that the area of highest estimated fishing mortality overlapped with the region of higher relative abundance for the species, corresponding to a narrow band between approximately 10-15°N and 150°E-140°W. Fishing operations targeting bigeye tuna and operating during the April-June period had the highest mortality over the recent period (2011-2014).**
3. **SC13 noted that the Commission needs to further consider appropriate limit reference points and risk tolerances for exceeding LRPs for sharks.**
4. **SC13 recommends that WCPFC14 take the results of this assessment into consideration when framing a management measure for bigeye thresher sharks in the WCPO.**

# Useful References

WCPFC-SC13-SA-WP-11 Pacific-wide sustainability risk assessment of bigeye thresher shark (Alopias superciliosus) Rev 2 (12 August 2017). <https://www.wcpfc.int/node/29524>