Summary of making non-detriment findings

Species: Shortfin Mako *(Isurus oxyrinchus)* , North Pacific Population

2	NDF can be made when the specimen is:		
	(1)	The specimen is collected before the listing in Appendix.	N/A
	(2)	The specimen is not a nature origin such as: ① Bred from parents collected before listing in Appendix. ② Bred from parents which were imported under the CITES procedures. ③ Bred from parents which met the requirement of NDF. ④ Others (Bred under a robust technique which was proved to be able to make F2.)	N/A
	(3)	The specimen is collected from a part of an individual by a method without affecting the survival of the individual (such as a specimen of biopsy sampling, an embryo, spermatozoa and so on).	N/A
	(4)	The specimen is collected from a dead individual and it is reasonably considered that the death is not attributable to the specimen collector, e.g., a stranded whale. (A by-caught individual is excluded from this category.)	N/A
3	When a specimen does not meet any criterion of paragraph 2 above, NDF should be basically considered, taking into account the following information: Reference: ISC(International Scientific Committee). 2018. Shortfin mako stock assessment report.		
	(1)	Biological characteristic and life history of the species	Several studies have suggested Shortfin Mako (SFM) reproduce every two to three years, with an estimated gestation of 12 to 25 months (Mollet et al. 2000; Juong and Hsu 2005; Semba et al. 2011). Combined Japanese and Taiwanese data suggested that females on average give birth to ~12 pups per litter (ISC 2017a). It was assumed that pups are born at ~60 cm pre-caudal length (PCL), and adults reach a maximum length of between 232–244 cm PCL for males and 293–315 cm PCL for females (Takahashi et al. 2017). Sex-specific maturity ogives developed from a combined Japanese and Taiwanese dataset suggested that lengths at 50% maturity for male and female SFMs are 166 cm PCL and 233 cm PCL respectively (Semba et al. 2017).
	(2)	Distribution range of the species (historical and present)	SFM are distributed throughout the pelagic, tropical to temperate North Pacific Ocean (NPO).
	(3) (8) (9)	Stock structure, status and trend of the species Monitoring of the species status Conservation of the species	Single stock of SFM is assumed in the NPO based on evidence from genetics, tagging studies, and lower catch rates of SFM near the equator compared to temperate areas. The ISC SHARKWG's first full stock assessment of SFM in NPO was conducted in 2018, which provides the best scientific information available on the stock status thereof. The North Pacific SFM stock was assessed using a length-based statistical catch-at-age Stock Synthesis model, that was fit to time series of standardized CPUE and sex-specific size composition data provided by Japan, USA, Taiwan, and Mexico. In this assessment, the reproductive capacity of this population was calculated as spawning abundance (SA; i.e. number of mature female sharks) and stock status is reported in relation to maximum sustainable yield (MSY). 1-SPR (Spawning potential ratio) is the reduction in the SA per recruit due to fishing and can be used to describe the overall impact of fishing on a fish stock. The results show that the current SA was 36% (CV=30%) higher than the estimated SA at MSY, and the recent annual fishing intensity (1-SPR) was 62% (CV=38%) of fishing intensity at MSY. Relative to MSY, SFM in the NPO is likely (>50%) not in an overfished condition and overfishing is likely not occurring.The Kobe plot showed that SFM in the NPO have likely (>50%) experienced overfishing (1-SPR/1-SPRMSY > 1) in the past but the stock is likely (>50%) not in an overfished condition over the past two decades. Future projections over a 10-year period (2017-2026) were also performed. Based on the results, the SA is expected to increase gradually if fishing intensity remains constant or is decreased moderately relative to 2013-2015 levels. These results were endorsed at Scientific Committee 14th regular session, Western and Central Pacific Fisheries Commission (WCPFC).
	(4)	Threats to the species	Bycatch in longline fisheries etc.

	(5) (6) (7)	Historical and present fishing situation and mortality rate of the species Introduced and proposed management measures for the species Compliance situation of the management measures	According to the surveys on landings of Shortfin Mako in major fishing gears in Japan, 430-1,479 tons of SFM was landed annually during the period 1992-2021. Landings from longline fishery accounted 316-1,308 tons for the bulk of landings, occupying approximately 80% of total landing for SFM. The fishing effort (number of hooks) has been decreasing during the period. All the regional tuna fisheries management organizations require full utilization of the sharks caught and the submission of fishing data. In addition, the WCPFC agreed at its 2014 annual meeting that (1) in the longline fisheries targeting tunas and billfish, either of wire leader or shark lines should not be used, and (2) in the longline fisheries targeting sharks, management plans should be developed that include the measures to limit the catch at an appropriate level. In response to above (2), the management plan stipulating to set the annual upper catch limit of SFM at 600 tons and release SFM smaller than 1m has been implemented for the duration of five years since January 1, 2016, in offshore longline fisheries targeting SFM in Japan.
	(10)	Continuity of the role of the species in the ecosystem	SFM is recognized as a top predator.
	(11)	Effects of illegal trade on the survival of the species	Unknown
5	When NDF is considered based on the information in paragraph 3 above, as a first step, items iii), v) and vi) of paragraph 3 should be considered in accordance with the following criteria in order. If these three items meet requirements in the criteria, the other items in paragraph 3 also should be considered to judge whether NDF can be made.		
	(1)	When a TAC of the species is established or calculated on scientific bases, the present total catch of the species including the export is less than the amount of the TAC.	N/A
	(2)	In case that establishment or calculation of a TAC of the species on scientific bases is difficult, but the stock trend can be estimated for a certain period based on catch or other data, the stock does not show a decreasing trend and the present total catch of the species including the export is less than the average past catch amount of the species. (The length of the period depends on biological characteristic of the species.)	**Applicable** According to the result of stock assessment of SFM in the NPO, Kobe plot shows SA has been higher than the estimated SA at MSY, and fishing intensity (1-SPR) has been lower than fishing intensity at MSY, since 1992. In 2021, 430 tons of SFM, including the specimen to be exported, was landed in Japan, which was within the average catch during the period 1992-2021
	(3)	In case that establishment or calculation of a TAC of the species on scientific bases is difficult and 5. ii) above is not applicable, the stock is considered to be maintained through the management measures which have been introduced or will be introduced in the near future. In making judgment of the effect of the management measures, the following information should be considered: a) Protected areas are effectively established. b) Time closure is effectively established. c) It is estimated that the fishing pressure has been decreased substantially because the number of fishermen to catch the species is regulated and the number has been substantially decreased over a long period. d) Regulation of fishing gear is effectively established. e) Individuals smaller than a certain size are protected. f) Other effective management measures (such as release of females, prohibition of bottom trawl, restriction of power of light and so on) are established. g) Combination of above mentioned measures brings the same conservation effect.	
	(4)	In case that establishment or calculation of a TAC of the species on scientific bases is difficult and neither 5. ii) nor iii) is applicable, the annual catch amount of the species is considered negligible against the estimated stock size. In estimating the stock size, the minimum stock size should be estimated, taking into account, inter alia, the past catch record, the area of distribution, the stock size and productivity of look-alike species as well as the catch amount and the maximum fishing efficiency. The “negligible level” should in principle follow the table below, depending on the productivity of the species. When any parameter of the species falls under a less productivity category, the species shall be regarded as belonging to the category.	
	(5)	The species is considered to be maintained under the present fishing activities because of the stock enhancement activities for the species	
Conclusion			**NDF can be made.**