

Information Paper submitted by Japan

Reference for Chub Mackerel CMM Discussion

Abstract:

This document presents the reference for Chub mackerel CMM discussion



Table 3 of Stock assessment report for chub mackerel
(Page 209 of the meeting report of SC09)

Table 3

Reference points for the base case scenario. Reference point values in this table are calculated by holding $F_{current}$ the same for all calculations, but by varying the time period (either FY1970-FY2022 or FY2016-FY2022) over which the biological parameters are estimated. Refer to Glossary in the body of the assessment for the definitions. For the description of the biological parameters, see Table ANNEX 3.

Biological parameters used	FY2016- FY2022	FY1970-FY2022
	S28-ProcEst	S28-ProcEst
current%SPR	28.3	40.3
Fmed/Fcur	0.478	1.629
F0.1/Fcur	1.344	1.344
FpSPR.30.SPR/Fcur	0.942	1.498
FpSPR.40.SPR/Fcur	0.673	1.010
FpSPR.50.SPR/Fcur	0.484	0.696
FpSPR.60.SPR/Fcur	0.342	0.475
FpSPR.70.SPR/Fcur	0.230	0.311
F _{MSY} /Fcur	0.258	0.668
B _{MSY}	9396.157	17179.502
SSB _{MSY}	2904.704	6084.597
h	0.358	0.501
SSB0	7123.476	17441.919
SSB _{MSY} /SSB0	0.408	0.349
F _{MSY} SPR	0.673	0.511
MSY	436.8467	1713.406
MSY/B _{MSY} (exploitation rate at MSY)	0.046	0.10

Table 5 of Stock assessment report for chub mackerel
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Table 5

Probability that future SSB is above 2022 SSB in each model.

Name	HCR_name	2023	2024	2025	2026	2027	2028	2029	2030
B2-Mage	Catch000	0	100	100	90	44	43	45	43
B2-Mage	Catch050	0	100	100	100	100	100	100	100
B2-Mage	Catch100	0	100	100	100	100	100	100	100
B2-Mage	Catch150	0	100	100	100	100	98	98	98
B2-Mage	Catch200	0	100	100	100	98	92	93	94
B2-Mage	Catch300	0	100	100	100	72	68	69	70
B2-Mage	Catch400	0	100	100	66	42	43	42	40
S32-JP23indics	Catch000	0	0	0	0	1	3	3	2
S32-JP23indics	Catch050	0	0	100	100	100	100	100	100
S32-JP23indics	Catch100	0	0	100	100	100	97	95	96
S32-JP23indics	Catch150	0	0	100	100	92	67	71	73
S32-JP23indics	Catch200	0	0	100	100	31	35	41	42
S32-JP23indics	Catch300	0	0	5	1	4	8	8	6
S32-JP23indics	Catch400	0	0	0	0	1	2	1	1
S78-ProcEst	Catch000	38	57	76	64	48	44	46	43
S78-ProcEst	Catch050	38	57	97	99	98	98	98	99
S78-ProcEst	Catch100	38	57	96	96	94	94	95	96
S78-ProcEst	Catch150	38	57	93	92	88	88	89	90
S78-ProcEst	Catch200	38	57	89	87	80	78	79	80
S78-ProcEst	Catch300	38	57	79	70	58	56	56	56
S78-ProcEst	Catch400	38	57	66	49	38	36	34	32
S34-ProcEst23	Catch000	0	7	47	26	10	12	14	12
S34-ProcEst23	Catch050	0	7	95	98	97	96	97	98
S34-ProcEst23	Catch100	0	7	89	93	88	84	86	88
S34-ProcEst23	Catch150	0	7	80	81	69	64	67	68
S34-ProcEst23	Catch200	0	7	70	63	45	42	44	45
S34-ProcEst23	Catch300	0	7	45	25	13	14	14	12
S34-ProcEst23	Catch400	0	7	24	7	3	5	4	3



Estimate process error for all age groups (base case)



Estimate process error for all age groups and use Japanese indices up to FY2023