

RESOLUTION BY ICCAT TO STANDARDIZE THE PRESENTATION OF SCIENTIFIC INFORMATION IN THE SCRS ANNUAL REPORT AND IN WORKING GROUP DETAIL REPORTS

NOTING that the presentation of scientific information in the Standing Committee for Research and Statistics (SCRS) annual report to the Commission can vary by stock;

STRESSING the importance of standardizing the presentation of scientific information to facilitate an easier appropriation and utilization by the Commission;

RECALLING recommendations of the Kobe II Workshop of Experts to Share Best Practices on the Provision of Scientific Advice and of the Kobe III recommendations, in particular on development on research activities to better quantify the uncertainty and understand how this uncertainty is reflected in the risk assessment inherent in the Kobe II strategy matrix;

THE INTERNATIONAL COMMISSION FOR THE CONSERVATION
OF ATLANTIC TUNAS RESOLVES AS FOLLOWS:

1. In support of the SCRS scientific advice, the Executive Summaries within the SCRS annual report which present the results of the stock assessment results should include, when possible:
 - i) A statement characterizing the robustness of methods applied to assess stock status and to develop the scientific advice. This statement should focus on modeling approaches and on assumptions.
 - ii) Three Kobe matrices, in accordance with the format set out in Annex **Table 2**:
 - a) A Kobe II strategy matrix indicating the probability of $B > B_{MSY}$ for different levels of catch across multiple years.
 - b) A Kobe II strategy matrix indicating the probability of $F < F_{MSY}$ for different levels of catch across multiple years.
 - c) A Kobe II strategy matrix indicating the probability of $B > B_{MSY}$ and $F < F_{MSY}$ for different levels of catch across multiple years.
 - d) Kobe II strategy matrices to be prepared by the SCRS should highlight in a similar format as shown in Annex **Table 2** a progression of probabilities over 50 % and in the range of 50-59 %, 60-69 %, 70-79 %, 80-89 % and ≥ 90 %.
 - e) When the Commission agrees on acceptable probability levels on a stock by stock basis and communicates them to the SCRS, the SCRS should prepare and include, in the annual report, the Kobe II strategy matrices using color coding corresponding to these thresholds.
 - iii) A statement concerning the reliability of long term projections period.
 - iv) A Kobe plot chart showing:
 - a) Management reference points expressed as $F_{CURRENT}$ on F_{MSY} (or a proxy) and as $B_{CURRENT}$ on B_{MSY} (or a proxy);
 - b) The estimated uncertainty around current stock status estimates;
 - c) The stock status trajectory.
in accordance with the format set out in Annex **Figure 1**.
 - v) A pie chart summarizing the stock status showing the proportion of model outputs that are within the green quadrant of the Kobe plot chart (not overfished, no overfishing), the yellow quadrant (overfished or overfishing), and the red quadrant (overfished and overfishing), in accordance with the format set out in Annex **Figure 2**.

- vi) An indication of the modeling approaches used by the SCRS to conduct the stock assessment shall be included in the caption and in the corresponding text accompanying the introduction of the matrices and the charts.
 - vii) Statements, where needed, reflecting the different opinions expressed regarding the SCRS scientific advice during the endorsement process.
2. The Kobe plot chart described in paragraph 1 should reflect the uncertainties on the estimates of the relative Biomass ($B_{CURRENT}$ on B_{MSY} or its proxy) and of the relative fishing mortality ($F_{CURRENT}$ on F_{MSY} or its proxy), provided that statistical methods to do so have been agreed upon by SCRS and that sufficient data exist to do so.
 3. The SCRS should review recommendations and templates for the Kobe II strategy matrices, plot and pie charts as laid down in this resolution and should advise the Commission on possible improvements.
 4. If the Commission adopts alternative reference points, such as limit reference points associated to the precautionary approach, the SCRS should also provide in its annual report versions of the elements described in paragraphs 1 and 2 calculated with respect to these alternative reference points and following the format specified in the same paragraphs.
 5. The SCRS should indicate in its annual report those cases where the modeling approaches used during the assessment and/or data limitation did not allow for the preparation of the elements mentioned above.
 6. The Kobe II strategy matrices are intended to reflect the scientists understanding of the uncertainties associated with their model estimates. Therefore, where models and/or data are insufficient to quantify those uncertainties, the SCRS should consider alternative means of representing them in ways that are useful to the Commission.
 7. When, due to data limitations, the SCRS is unable to develop Kobe II strategy matrices and associated charts or other estimates of current status relative to benchmarks, the SCRS should develop its scientific advice on fisheries indicators in the context of Harvest Control Rules, if previously agreed upon by the Commission.
 8. The SCRS should also include in its annual report any other tables and/or graphics that it considers useful to provide advice to the Commission.
 9. The Commission encourages the SCRS to also include in the detailed reports, where possible, the following additional elements:
 - i) A scoring table addressing data completeness and quality with the format set out in Annex **Table 1**;
 - ii) Information on the by-catches of the different fleet segments and fisheries, as well as other ecosystems considerations.

Possible Templates for Kobe II Strategy Matrices, Plot and Pie Charts

Table 1. Possible format for reporting scores on data completeness and quality as included in the 2011 SRCS Annual Report.

1	CP	EU.España	LL	T1	3810	4013	4554	7100	6315	7431	9712	11134	9600	5696	5736	6506	6351	6392	6027	6948	5519	5133	4079	3993	4581	3967	3954	4585	5373	5511	5446	5564	4366	4949	4147	5249	34,52%	34,52%	1
1	CP	EU.España	LL	T2																									3286	21,61%	56,13%	2							
2	CP	U.S.A.	LL	T1	5015	3986	5271	4510	4666	4642	5143	5164	6020	5855	4967	4399	4124	4044	3960	4452	4015	3399	3433	3364	3316	2498	2598	2757	2591	2273	1961	2474	2405	2691	2525	3286	21,61%	56,13%	2
2	CP	U.S.A.	LL	T2																									1176	7,73%	63,86%	3							
3	CP	Canada	LL	T1	1794	542	542	960	465	550	973	876	874	1097	819	953	1487	2206	1654	1421	646	1005	927	1136	923	984	954	1216	1161	1470	1238	1142	1115	1061	1166	1176	7,73%	63,86%	3
3	CP	Canada	LL	T2																									912	6,00%	69,86%	4							
4	CP	EU.Portugal	LL	T1																									892	5,87%	75,73%	4							
4	CP	EU.Portugal	LL	T2																									529	3,48%	79,21%	5							
5	CP	Japan	LL	T1	1167	1315	1755	537	665	921	807	413	621	1572	1051	992	1064	1126	933	1043	1494	1218	1391	1089	759	567	319	263	575	705	656	889	935	778	1047	892	5,87%	75,73%	5
5	CP	Japan	LL	T2																									529	3,48%	79,21%	6							
6	NCO	NEI (ETRO)	LL	T1																									385	2,53%	81,74%	6							
6	NCO	NEI (ETRO)	LL	T2																									292	1,92%	83,66%	7							
7	CP	EU.España	GN	T1																									292	1,92%	83,66%	8							
7	CP	EU.España	GN	T2																									199	1,31%	84,97%	8							
8	NCC	Chinese Taipei	LL	T1	134	182	260	272	164	152	157	52	23	17	269	577	441	127	507	489	521	509	286	285	347	299	310	257	30	140	172	103	82	89	88	292	1,92%	83,66%	8
8	NCC	Chinese Taipei	LL	T2																									199	1,31%	84,97%	9							
9	CP	EU.Portugal	SU	T1																									184	1,21%	86,18%	9							
9	CP	EU.Portugal	SU	T2																									172	1,13%	87,31%	10							
10	CP	Maroc	LL	T1	136	124	91	125	79	137	178	192	195	219	24	92	41	27	7	28	35	239	35	38	264	154	223	255	325	333	229	428	720	963	184	1,21%	86,18%	10	
10	CP	Maroc	LL	T2																									172	1,13%	87,31%	10							
11	CP	EU.España	UN	T1																									169	1,11%	88,42%	11							
11	CP	EU.España	UN	T2																									128	0,84%	89,27%	11							
12	CP	Senegal	LL	T1																									128	0,84%	89,27%	12							
12	CP	Senegal	LL	T2																									124	0,82%	90,08%	12							
13	CP	Canada	HP	T1	12	128	34	35	86	78	24	150	92	73	60	28	22	189	93	89	240	18	95	121	38	147	87	193	203	267	258	248	176	128	0,84%	89,27%	13		
13	CP	Canada	HP	T2																									124	0,82%	90,08%	13							
14	CP	China P.R.	LL	T1																									117	0,77%	90,85%	14							
14	CP	China P.R.	LL	T2																									117	0,77%	90,85%	14							
15	CP	Brasil	LL	T1																									108	0,71%	91,56%	15							
15	CP	Brasil	LL	T2																									108	0,71%	91,56%	15							
16	CP	Trinidad and Tobago	LL	T1	21	26	6	45	151	42	79	66	71	562	11	180	150	158	110	130	138	41	75	92	78	83	91	19	29	48	30	21	108	0,71%	91,56%	16			
16	CP	Trinidad and Tobago	LL	T2																									108	0,71%	91,56%	16							
17	CP	Senegal	UN	T1																									94	0,61%	92,89%	17							
17	CP	Senegal	UN	T2																									94	0,61%	92,89%	17							
18	NCO	NEI (MED)	UN	T1	12																									77	0,50%	93,39%	18						
18	NCO	NEI (MED)	UN	T2																									77	0,50%	93,39%	18							
19	CP	U.S.A.	GN	T1	49	54	120	524	535	82	86	92	88	74	78	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77	0,50%	93,39%	19	
19	CP	U.S.A.	GN	T2																									75	0,49%	93,88%	19							
20	CP	Maroc	GN	T1	19	9	4	2	13	32	322	13	179	60	51	243	64	98	76	9											75	0,49%	93,88%	20					
20	CP	Maroc	GN	T2																									75	0,49%	93,88%	20							
21	CP	EU.France	UN	T1	5	4																									71	0,47%	94,35%	21					
21	CP	EU.France	UN	T2																									71	0,47%	94,35%	21							
22	CP	EU.France	TW	T1																									57	0,38%	94,72%	22							
22	CP	EU.France	TW	T2																									57	0,38%	94,72%	22							
23	CP	Grenada	LL	T1																									46	0,30%	95,03%	23							
23	NCO	Grenada	LL	T2																									46	0,30%	95,03%	23							
24	CP	Korea Rep.	LL	T1	284	136	198	53	32	160	68	60	30	320	51	3	3	19	16	16	19	15											46	0,30%	95,33%	24			
24	CP	Korea Rep.	LL	T2																									46	0,30%	95,33%	24							
25	CP	Belize	LL	T1																									41	0,27%	95,60%	25							
25	CP	Belize	LL	T2																									41	0,27%	95,60%	25							
26	CP	EU.France	GN	T1																									40	0,27%	95,86%	26							
26	CP	EU.France	GN	T2																									40	0,27%	95,86%	26							
27	CP	U.S.A.	HL	T1																									38	0,25%	96,11%	27							
27	CP	U.S.A.	HL	T2																									38	0,25%	96,11%	27							
28	CP	EU.Ireland	GN	T1																									38	0,25%	96,36%	28							
28	CP	EU.Ireland	GN	T2																									38	0,25%	96,36%	28							
29	CP	FR.St Pierre et Miquelon	LL	T1																									35	0,23%	96,59%	29							
29	CP	FR.St Pierre et Miquelon	LL	T2																									35	0,23%	96,59%	29							

Table 2. Format of a Kobe II strategy matrix indicating the probability of $B > B_{MSY}$, or $F < F_{MSY}$ or $B > B_{MSY}$ and $F < F_{MSY}$ for different levels of catch limits and years.

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
0	25%	51%	70%	78%	84%	87%	89%	91%	92%	93%
250	24%	48%	66%	76%	81%	85%	87%	89%	90%	92%
500	24%	45%	63%	73%	78%	82%	85%	87%	89%	90%
750	24%	43%	59%	69%	75%	79%	82%	84%	86%	87%
1000	24%	40%	54%	65%	71%	75%	78%	81%	82%	84%
1250	24%	37%	49%	59%	66%	70%	73%	76%	78%	80%
1500	23%	35%	45%	53%	59%	64%	67%	70%	72%	74%
1750	23%	32%	40%	46%	51%	55%	58%	61%	64%	65%
2000	23%	29%	35%	39%	43%	45%	47%	49%	51%	53%
2250	22%	26%	29%	31%	33%	34%	36%	36%	37%	38%
2500	20%	21%	22%	22%	22%	21%	21%	21%	21%	21%

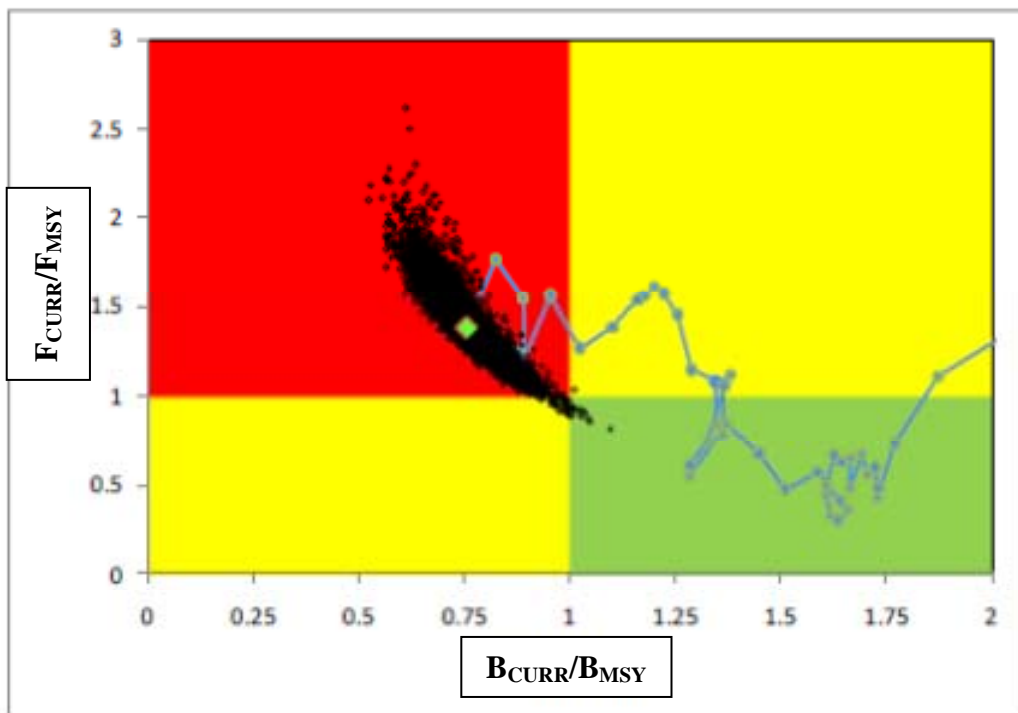


Figure 1. Example of a Kobe plot chart showing the stock status trajectory (intervals around relative biomass and relative fishing mortality will be included when available).

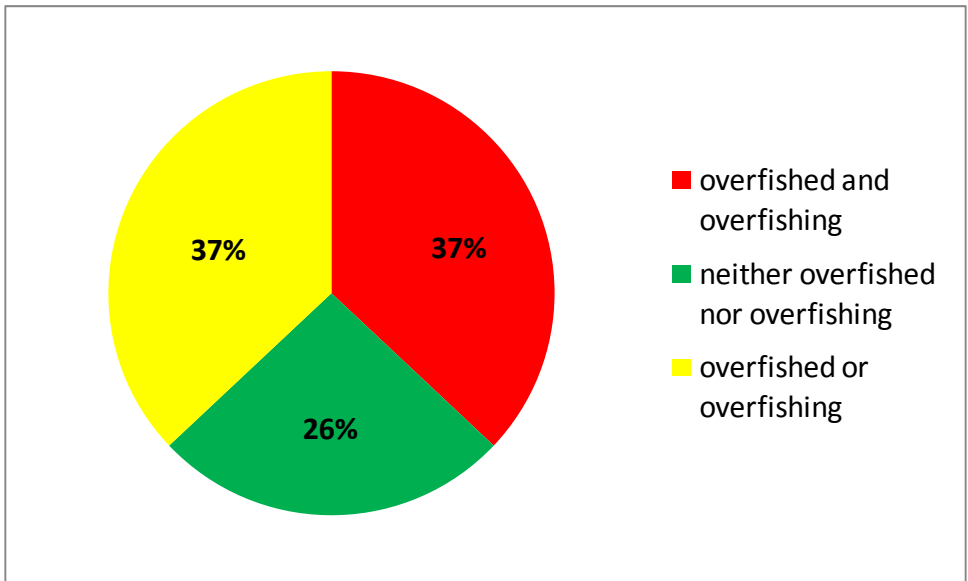


Figure 2. Example of pie chart summarizing the stock status showing the proportion of model outputs that are within each quadrant of the Kobe plot chart.