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Status of public domain catch and effort data held by the Western and Central Pacific Fisheries Commission

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STATUS OF PUBLIC DOMAIN CATCH AND EFFORT DATA HELD BY THE WESTERN AND CENTRAL PACIFIC FISHERIES COMMISSION

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1. Introduction

1. At its fourth meeting in August 2008, the Scientific Committee recommended that "public domain catch and effort data should be reviewed at SC5". In support of the review, this paper provides background information on the definition of public domain catch and effort data, issues concerning the three-vessel rule, the results of filtering aggregated catch and effort data for the three-vessel rule, and on the dissemination of catch and effort data since the establishment of the Commission.

2. Background

Third Regular Session of the Commission, Apia, December 2006

2. At its third meeting, the report of the Ad Hoc Task Group [Data] in WCPFC3–2006/11 was considered. The AHTG [Data] had met in July/August 2006 in Manila to consider data types, data confidentiality and to develop draft rules and procedures for the security and confidentiality of WCPFC data. The draft rules and procedures are contained in Attachment F of the report. The confidentiality of private information in public domain data (WCPFC3–2006/11, par. 9) is stated as follows:

> "Subject to the decisions of the Commission, data in the public domain shall not reveal the activities of any vessel, company or person and shall not contain private information."

3. Catch and effort data designated to be in the public domain (WCPFC3–2006/11, par. 10) are stated to be:

> "catch and effort data aggregated by gear type, [flag/CCM fleets], year/month and, for longline, 5° latitude and 5° longitude, and, for surface gear types, 1° latitude and 1° longitude".

4. In relation to the AHTG [Data] report, the Commission "adopted the report as a 'living document'", "agreed that the report be considered by SC3 and TCC3 for possible refinement" and "agreed that the report, as refined by SC3 and TCC3, be further considered by WCPFC4" (WCPFC3 Summary Report, par. 40).

Fourth Regular Session of the Commission, Guam, December 2007

5. The Rules and Procedures were revised following WCPFC3, and WCPFC4 adopted the revised Rules and Procedures as contained in WCPFC4–2007/12, Attachment C (WCPFC4 Summary Report, par. 232). The revised Rules and Procedures are given in the annex to this paper.

6. Two important changes in regard to public domain catch and effort data were made in the revised Rules and Procedures. First, the text "Catch and Effort data in the public domain shall be

made up of observations from a minimum of three vessels" was added to the paragraph on the confidentiality of private information (Rules and Procedures, par. 9):

> "Data in the public domain shall not reveal the individual activities of any vessel, company or person and shall not contain private information. Catch and Effort data in the public domain shall be made up of observations from a minimum of three vessels."

7. Second, the text "and made up of observations from a minimum of three vessels" was added to the definition of catch and effort data in the public domain (Rules and Procedures, Appendix 1, item 4):

> "catch and effort data aggregated by gear type, flag, year/month and, for longline, 5° latitude and 5° longitude, and, for surface gear types, 1° latitude and 1° longitude – and made up of observations from a minimum of three vessels".

Fourth Regular Session of the Scientific Committee, Port Moresby, August 2008

8. At the fourth meeting of the Scientific Committee, the Executive Director of the WCPFC Secretariat noted "that the three-vessel restriction approximately halves the amount of catch and effort data that the Commission can place in the public domain (e.g. publish on its website)" and that "most CCMs do not provide the WCPFC with the number of vessels in a particular stratum, and it is not possible (for the Secretariat and its service providers) to determine the number of vessels associated with the aggregated catch and effort data that has been provided, except for those fleets for which operational catch and effort data has been provided" (SC4 Summary Report, Attachment K, par. 46).

9. The Scientific Committee therefore recommended that "the WCPFC Secretariat write to CCMs encouraging them to use para 34 of the Rules and Procedures to voluntarily authorize the Commission to waive the three vessel restrictions for catch and effort data that they have provided" (SC4 Summary Report, par. 295). Paragraph 34 of the Rules and Procedures states "These Rules and Procedures do not prevent a CCM from authorizing the release of any data it has provided to the WCPFC."

Fifth Regular Session of the Commission, Busan, December 2008

10. Among the SC4 recommendations that were presented at the fifth regular session of the Commission was the recommendation in paragraph 295 of the SC4 Summary Report stated above (WCPFC5 Summary Report, par. 77). In this regard, "WCPFC5 adopted the recommendations of SC4 regarding bycatch mitigation and data and information..." (WCPFC5 Summary Report, par. 78).

11. The recommendation in paragraph 295 of the SC4 report was implemented by the Secretariat on 6 February 2009 in Circular 2009/02. However, in the table in Attachment A of the circular, on issues arising from WCPFC5, only the text of paragraph 78 in the WCPFC5 Summary Report (see paragraph 10 above) was cited, and not the full text of the SC4 recommendation in paragraph 295 of the SC4 Summary Report (see paragraph 9 above). At the time of writing, the Secretariat had not received any responses from CCMs regarding the waiving of the three-vessel rule.

3. Issues regarding the three-vessel rule

12. There are three conceptual and practical problems with the three-vessel rule.

Relevance of the number of vessels to raised aggregated catch and effort data

13. It would appear that the three-vessel rule was originally conceived under the assumption that the Commission's aggregated public domain catch and effort data would be derived from operational (logsheet) catch and effort data of 100% coverage. If that were, in fact, the case, then catches by individual vessels could potentially be identified if it was known which strata of time period (i.e., year and month) and geographic area (i.e., 5° x 5° or 1° x 1° area) were fished by the vessel and by no other vessels.

14. However, for almost all fleets, the aggregated catch and effort data held by the Commission are derived from operational data of less than 100% coverage. That is, the operational data are raised by a coverage rate to represent the total catch and effort. The coverage rates can range from very small to very large. The interpretation of the raised catch and effort is straightforward, but the interpretation of the number of vessels in a stratum of raised catch and effort data is not. For example, if the coverage rate used to raise the operational data for a particular fleet in a given year is 20% and if the operational data covering a particular stratum are from a single vessel, how can the number of vessels that the raised catch and effort data represent be determined? If the number of vessels was derived in the same manner as the catch and effort data, then the single vessel would be raised by the coverage rate of 20% to five vessels. But there is a logical difficulty with this approach. If the aggregated catch and effort in a particular stratum is accurate, which may or may not be the case, the difference between the operational catch and effort and the raised catch and effort could have been the result of fishing by any number of vessels and not necessarily the raised number of vessels determined from the operational data and the coverage rate.

15. This brings into question the relevance of "confidentiality" to raised catch and effort data. If the coverage rate were known and if it were known that a particular vessel and no other vessels fished in a particular stratum, then the vessel's catch and effort could be determined from the raised catch and effort data. But coverage rates are not published with public domain catch and effort data and so this situation cannot occur.

Lack of data on the number of vessels covered by the operational data used to derive the aggregated data

16. As noted above (paragraph 8), neither the number of vessels per stratum of time and area covered by operational data (nor the raised "number of vessels") are submitted with the aggregated catch and effort data that are provided to the Commission. Therefore, even if it were desirable, it is not possible for the commission data managers to determine the number of vessels per stratum.

Bias in CPUE determined from filtered aggregated catch and effort data

17. Catch and effort data that are released into the public domain by regional tuna fishery management organisation are used for scientific purposes by national fisheries agencies, universities, environmental organisations, consultants, etc. However, if the catch and effort data have been filtered to eliminate strata with a minimum number of vessels, then estimates of catch and effort, and the geographic area covered by the fleet, that are determined from the data will be under-estimated. The potential also exists for estimates of catch per unit effort (CPUE) determined from the data to be biased and this is examined further below.

4. Filtering of aggregated catch and effort data

18. The number of vessels per stratum of aggregated catch and effort data held by the Commission is not known. However, the effect of filtering the data for the three-vessel rule was approximated by using estimates of the maximum level of effort that would be expended in a stratum by two vessels, which were derived as follows:

- For longliners, the maximum effort during one month was determined to be 40,000 hooks. The maximum effort for two vessels in a month is therefore 80,000 hooks.

- For pole-and-line vessels and purse seiners, the maximum effort of a vessel during one month was determined to be 20 days fishing or searching. The maximum effort for two vessels in a month is therefore 40 days.

19. Table 1–3 show the effect on (a) fishing effort, (b) the number of strata of 5° x 5° area and month, and (c) CPUE, of filtering aggregated data covering 2003–2006, stratified by flag, for the three-vessel rule for longline, pole-and-line and purse-seine respectively.

Longline

20. For longline, the level of effort in the aggregated data is reduced to 90.2% of the unfiltered level of effort and the number of strata is reduced to 35.9% of the unfiltered number of strata, on average. Six out of 27 flags are excluded in the entirety after filtering and the number of strata covered for 17 other fleets is less than 50% of the total.

21. Filtering results in estimates of albacore, bigeye and yellowfin CPUE per flag that range from 44% to 124%, from 83% to 106% and from 78% to 105%, respectively, of CPUE determined from unfiltered data.

Pole-and-line

22. For pole-and-line, the level of effort in the aggregated data is reduced to 87.3% of the unfiltered level of effort and the number of strata is reduced to 24.0% of the unfiltered number of strata, on average. Two out of four flags are excluded in the entirety after filtering and the number of strata covered for one other fleet is less than 50% of the total.

23. Filtering results in estimates of skipjack CPUE per flag that are 101% and yellowfin CPUE that range from 98% to 101% of CPUE determined from unfiltered data.

Purse seine

24. For purse seine, the level of effort in the aggregated data is reduced to 81.7% of the unfiltered level of effort and the number of strata is reduced to 17.0% of the unfiltered number of strata, on average. Five out of 18 flags are excluded in the entirety after filtering and the number of strata covered for 11 other fleets is less than 50% of the total.

25. Filtering results in estimates of skipjack, yellowfin and bigeye CPUE per flag that range from 89% to 137%, from 13% to 140% and from 12% to 133%, respectively, of CPUE determined from unfiltered data.

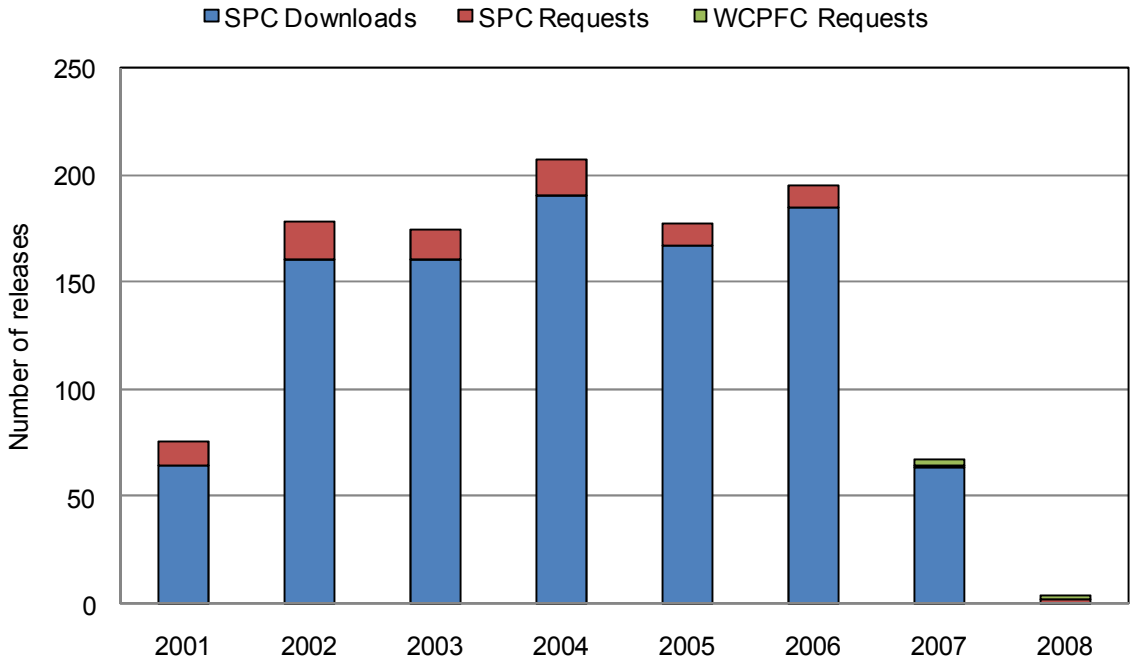
5. Dissemination of catch and effort data

26. Statistical bulletins containing catch and effort data aggregated by 5° x 5° and month covering the longline fleets of Japan, Korea and Chinese Taipei, and the pole-and-line fleet of Japan, have been published in the public domain for fishing that took place during 1962–1980, 1975–1992, 1972–1994 and 1970–1980 respectively (see References). These statistics were published without regard for a minimum number of vessels.

27. The SPC Oceanic Fisheries Programme (and its predecessor programmes) disseminated aggregated catch and effort data since the early 1980s. Data considered to be in the public domain include the data aggregated by 5° x 5°, month and flag published in statistical bulletins (see paragraph 26) and data aggregated by 5° x 5° and month (for all flags combined). Data aggregated by 5° x 5°, month and flag that are not in the public domain were disseminated by SPC with authorisation from the sources of the data. SPC disseminated aggregated catch and effort data on its own behalf until the adoption of the Rules and Procedures by the Commission in December 2006; since then, SPC has disseminated aggregated catch and effort data on behalf of the Commission.

28. Figure 1 shows the number of releases of aggregated catch and effort data during 2001–2008. "SPC Downloads" refers to releases of data aggregated by 5° x 5° and month (for all flags combined) that were available on the SPC website until December 2007.[1] "SPC Requests" refers to non-public domain data released by SPC on its own behalf with authorisation from the sources of the data. "WCPFC Requests" refers to data disseminated by SPC on behalf of the Commission (excluding the dissemination of data available on the SPC website).

Figure 1. Releases of aggregated catch and effort data by SPC since 2001



[1] The number of releases represents the number of unique combinations of person and day of downloading, and excludes downloads by OFP staff.

29. The number of downloads of data aggregated by 5° x 5° and month (for all flags combined) from the SPC website ranged from 63 in 2007 to 190 in 2004. Following the adoption of the three-vessel rule in December 2007, data aggregated by 5° x 5° and month (for all flags combined) were no longer made available on the SPC website. During 2001–2006, the number of releases in responses to requests to SPC ranged from 10 in 2006 to 18 in 2002. In 2007 and 2008, one and two releases respectively were made of catch and effort data held by SPC on its own behalf (i.e., operational or trip level data not held by the Commission). The number of releases in response to requests to WCPFC was three in 2007 and two in 2008.

6. Filtering of aggregated catch and effort data for all flags combined

30. The OFP has prepared longline, pole-and-line and purse-seine data aggregated by 5° x 5° and month, for all flags combined, that have been filtered for the three-vessel rule under the criteria given in paragraph 18. The coverage of effort is somewhat reduced in the filtered data, compared to unfiltered data, while coverage of the number of time-area strata is considerably reduced. Since the level of coverage is only somewhat reduced, estimates of CPUE are relatively unbiased, on average. This information is summarised below:

- For longline, the level of effort in the aggregated data for all flags combined, 1950–2006, is reduced to 92.2% of the unfiltered level of effort and the number of strata is reduced to 46.0% of the unfiltered number of strata, on average. On average, filtering results in estimates of albacore, bigeye and yellowfin CPUE that are 100%, 101% and 101% respectively of the estimates determined from unfiltered data.

- For pole-and-line, the level of effort in the aggregated data for all flags combined, 1967–2007, is reduced to 99.1% of the unfiltered level of effort and the number of strata is reduced to 54.0% of the unfiltered number of strata, on average. On average, filtering results in estimates of skipjack and yellowfin CPUE that are 99% and 96% respectively of the estimates determined from unfiltered data.

- For purse seine, the level of effort in the aggregated data for all flags combined, 1967–2007, is reduced to 90.5% of the unfiltered level of effort and the number of strata is reduced to 32.8% of the unfiltered number of strata, on average. On average, filtering results in estimates of skipjack, yellowfin and bigeye CPUE that are 101%, 99% and 93% respectively of the estimates determined from unfiltered data.

7. Discussion

31. The number of downloads of aggregated catch and effort data from the SPC website averaged 141 per annum between 2001 and 2007, which indicates that there is a considerable demand for public domain catch and effort data. However, section 4 showed that filtering of the data aggregated by 5° x 5°, month and flag resulted in (a) the elimination of certain flags from the data, (b) a considerable drop in the number of time–area strata covered and (c) serious biases in the estimates of CPUE. *For most fleets (flag / gear type), the three-vessel rule is thus incompatible with a definition of public domain data as catch and effort data aggregated by gear type, flag, year/month and 5° x 5° area.* (The effects of filtering on data aggregated by 1° x 1° was not examined, but can be expected to be even worse in regard to coverage and the biases in estimates of CPUE.) Four approaches for dealing with this incompatibility are discussed below.

Waiving of the three-vessel rule

32. SC4 recommended that the Secretariat write to CCMs encouraging them to waive the three-vessel rule. The Secretariat has done so, but in an indirect manner (see paragraph 11). At the time of writing, no CCM has advised the Secretariat in regard to waiving of the three-vessel rule, either for it or against it. The first approach would be for the Secretariat to issue another circular that refers specifically to the waiving of the three-vessel rule.

Alternative formulation of the three-vessel rule in the Rules and Procedures and the guidelines for the Provision of Scientific Data to the Commission

33. It has been noted above that (a) there are conceptual and practical problems with the three-vessel rule, (b) the definition of public domain data as catch and effort aggregated by 5° x 5°, month and flag is incompatible with the three-vessel rule, and (c) waiving of the three-vessel rule has so far been ineffective. Bearing in mind that certain CCMs have published aggregated catch and effort data covering the Western and Central Pacific Ocean in the past without regard to a minimum number of vessels (see paragraph 26) and that certain CCMs continue to publish aggregated catch and effort data covering the Atlantic Ocean and Indian Ocean without regard to a minimum number of vessels, it would appear that not all CCMs, and possibly only a small number of them, require that their public domain data be filtered. In contrast, however, the present text in the Rules and Procedures makes the application of the three-vessel rule *obligatory* for all CCMs (see paragraphs 6 and 7).

34. A second approach would be to revise the text of the Rules and Procedures such that the application of a minimum number of vessels to public domain data is *voluntary*, rather than obligatory. This would protect those CCMs that may be required by their national policies to filter their public domain data for a minimum number of vessels. But it would also allow all other CCMs to have their data included in the public domain without filtering.

35. In this regard, changes to the paragraph 9 and Appendix 1, item 4, of the Rules and Procedures are proposed as follows, in conjunction with a change to the guidelines for the Provision of Scientific Data to the Commission:

> "Data in the public domain shall not reveal the individual activities of any vessel, company or person and shall not contain private information. ~~Catch and Effort data in the public domain shall be made up of observations from a minimum of three vessels.~~"
>
> "catch and effort data aggregated by gear type, flag, year/month and, for longline, 5° latitude and 5° longitude, and, for surface gear types, 1° latitude and 1° longitude~~ and made up of observations from a minimum of three vessels~~."

36. That is, this text would revert to the first version of the Rules and Procedures adopted by WCPFC3 (see paragraphs 2 and 3 above). The proposed change to the guidelines for the Provision of Scientific Data to the Commission is to insert the following paragraph in section 4, "Catch and effort data aggregated by time period and geographic area", after the fourth paragraph in that section:

> "In addition to the aggregated catch and effort data described above, a separate set of aggregated catch and effort data that has been filtered on the basis of a minimum number of vessels per stratum of time-area may also be provided for release into the public domain."

37. Note that (a) the Commission previously adopted the proposed changes to the Rules and procedures at WCPFC3, (b) a CCM would have the option of filtering aggregated catch and effort data for the public domain on the basis of any number of vessels, and not just on three vessels, and (c) a CCM that did not require filtering of its public domain catch and effort data would not have to take any additional action.

Revert to the definition of public domain catch and effort data prior to the establishment of the Commission

38. Prior to the establishment of the Commission, catch and effort data released into the public domain by SPC were aggregated by gear type, year/month and area (5° x 5° for longline and 1° x 1° for surface gears), for all flags combined. A third approach would be to revert to this definition of public domain catch and effort data. Filtering of data for all flags combined is described in section 6; however, since the vessel flag is not explicitly identified, leaving the data unfiltered would perhaps be justified.

Define all aggregated catch and effort data as non-public domain

39. A fourth approach would be to define all catch and effort data aggregated at a level of resolution higher than, say, gear type, flag, year and WCPFC Statistical Area (and perhaps certain sub-areas), as non-public domain. That is, there would effectively be no aggregated catch and effort data in the public domain.

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Table 1. Comparison of longline CPUE during 2003–2006 determined from filtered and unfiltered aggregated catch and effort data. Fleets for which the coverage of filtered data is less than 50% of the total are given in pink; fleets and species for which the difference in CPUE is greater than 5% are given in blue.

FLAG	Coverage of effort (%) after filtering for the three-vessel rule	Coverage of strata (%) after filtering for the three-vessel rule	DIFFERENCES IN ALBACORE CPUE (No. / 100 hooks)			DIFFERENCES IN BIGEYE CPUE (No. / 100 hooks)			DIFFERENCES IN YELLOWFIN CPUE (No. / 100 hooks)		
			FULL	3 Ves	Ratio	FULL	3 Ves	Ratio	FULL	3 Ves	Ratio
AS	91.9	56.2	1.65	1.67	1.02	0.10	0.09	0.96	0.23	0.23	1.00
AU	75.2	30.8	0.85	0.94	1.11	0.24	0.23	0.96	0.72	0.67	0.94
BZ	76.3	35.3	0.55	0.68	1.24	0.28	0.29	1.03	0.19	0.19	1.00
CK	71.4	23.8	1.66	1.85	1.11	0.16	0.16	1.00	0.21	0.21	1.02
CN	89.1	32.7	0.54	0.49	0.90	0.53	0.55	1.05	0.26	0.26	1.01
FJ	94.0	21.8	1.53	1.55	1.01	0.09	0.08	0.96	0.30	0.30	1.00
FM	59.4	17.3	0.00	0.00	1.00	0.34	0.33	0.99	0.22	0.21	0.95
ID	99.7	82.4	0.00	0.00	0.44	0.18	0.18	1.00	0.45	0.45	1.00
JP	83.7	31.0	0.55	0.55	1.01	0.42	0.43	1.00	0.35	0.35	1.01
KI	0.0	0.0	0.02	0.00	0.00	0.37	0.00	0.00	0.49	0.00	0.00
KR	91.7	47.2	0.18	0.17	1.00	0.52	0.53	1.01	0.56	0.58	1.04
MH	0.0	0.0	0.00	0.00	0.00	0.07	0.00	0.00	0.26	0.00	0.00
NC	70.3	32.6	1.44	1.44	0.99	0.05	0.06	1.06	0.44	0.46	1.05
NU	0.0	0.0	1.54	0.00	0.00	0.14	0.00	0.00	0.41	0.00	0.00
NZ	88.2	27.0	1.76	1.82	1.03	0.07	0.06	0.89	0.02	0.01	0.78
PF	88.3	41.4	0.69	0.69	1.01	0.10	0.10	1.01	0.16	0.16	0.98
PG	86.9	39.1	1.36	1.49	1.10	0.15	0.15	0.98	0.89	0.87	0.98
PH	100.0	99.0	0.00	0.00	0.00	0.04	0.04	0.99	0.39	0.39	1.00
PW	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.00	0.00
SB	69.5	36.4	0.37	0.37	1.00	0.43	0.45	1.06	0.49	0.51	1.04
TO	67.0	32.8	0.62	0.65	1.05	0.09	0.09	0.97	0.26	0.25	0.94
TV	0.0	0.0	0.72	0.00	0.00	0.25	0.00	0.00	0.60	0.00	0.00
TW	93.2	43.9	0.45	0.44	0.97	0.23	0.22	0.97	0.29	0.29	1.01
US	91.9	57.0	0.05	0.05	0.97	0.37	0.38	1.02	0.09	0.08	0.98
VN	0.0	0.0	0.00	0.00	0.00	0.20	0.00	0.00	0.07	0.00	0.00
VU	75.2	22.6	2.18	2.38	1.09	0.16	0.14	0.83	0.15	0.13	0.88
WS	98.5	26.2	1.97	1.96	1.00	0.12	0.12	1.00	0.33	0.33	1.00
TOTAL	90.2	35.9	0.58	0.56	0.98	0.28	0.28	0.99	0.34	0.34	1.01

Table 2. Comparison of pole-and-line CPUE during 2003–2006 determined from filtered and unfiltered aggregated catch and effort data. Fleets for which the coverage of filtered data is less than 50% of the total are given in pink; fleets and species for which the difference in CPUE is greater than 5% are given in blue.

FLAG	Coverage of effort (%) after filtering for the three-vessel rule	Coverage of strata (%) after filtering for the three-vessel rule	DIFFERENCES IN SKIPJACK CPUE (MT / DAY)			DIFFERENCES IN YELLOWFIN CPUE (MT / DAY)		
			FULL	3 Ves	Ratio	FULL	3 Ves	Ratio
AU	0.0	0.0	2.99	0.00	0.00	0.00	0.00	0.00
JP	87.0	23.8	5.55	5.59	1.01	0.13	0.13	0.98
NZ	0.0	0.0	0.25	0.00	0.00	0.01	0.00	0.00
SB	97.9	68.8	3.96	4.00	1.01	0.18	0.18	1.01
TOTAL	87.3	24.0	5.44	5.48	1.01	0.13	0.13	0.99

Table 3. Comparison of purse-seine CPUE during 2003–2006 determined from filtered and unfiltered aggregated catch and effort data. Fleets for which the coverage of filtered data is less than 50% of the total are given in pink; fleets and species for which the difference in CPUE is greater than 5% are given in blue.

FLAG	Coverage of effort (%) after filtering for the three-vessel rule	Coverage of strata (%) after filtering for the three-vessel rule	DIFFERENCES IN SKIPJACK CPUE (MT / DAY)			DIFFERENCES IN YELLOWFIN CPUE (MT / DAY)			DIFFERENCES IN BIGEYE CPUE (MT / DAY)		
			FULL	3 Ves	Ratio	FULL	3 Ves	Ratio	FULL	3 Ves	Ratio
AU	0.0	0.0	23.53	0.00	0.00	0.61	0.00	0.00	0.01	0.00	0.00
CN	39.6	8.7	17.05	18.00	1.06	1.98	1.87	0.94	0.21	0.24	1.12
EP	0.0	0.0	18.16	0.00	0.00	3.82	0.00	0.00	8.17	0.00	0.00
ES	0.0	0.0	37.40	0.00	0.00	4.63	0.00	0.00	10.44	0.00	0.00
FM	9.5	1.2	17.43	16.95	0.97	2.95	3.17	1.08	0.42	0.32	0.76
ID	100.0	100.0	5.41	5.41	1.00	0.34	0.34	1.00	0.09	0.09	1.00
JP	63.9	15.4	23.38	27.01	1.16	3.07	3.21	1.05	0.56	0.53	0.96
KI	0.0	0.0	18.80	0.00	0.00	5.64	0.00	0.00	0.72	0.00	0.00
KR	75.3	21.6	24.38	26.87	1.10	4.60	5.10	1.11	0.24	0.26	1.09
MH	24.7	4.8	31.55	34.24	1.09	2.73	3.07	1.13	1.00	1.12	1.13
NZ	18.6	2.4	21.02	28.87	1.37	2.37	0.31	0.13	0.70	0.08	0.12
PG	75.8	23.8	20.08	19.40	0.97	4.37	4.56	1.04	0.59	0.63	1.07
PH	95.7	50.7	4.77	4.53	0.95	1.60	1.55	0.97	0.22	0.21	0.94
SB	50.9	16.0	16.28	15.04	0.92	11.53	13.66	1.18	1.73	2.16	1.25
SV	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TW	75.7	20.5	22.21	23.45	1.06	2.80	2.92	1.05	0.29	0.29	1.00
US	40.2	6.8	16.10	18.67	1.16	4.18	4.99	1.19	0.89	0.77	0.87
VU	26.7	4.9	29.35	38.30	1.30	3.39	4.73	1.40	0.33	0.44	1.33
TOTAL	81.7	17.0	12.59	11.26	0.89	2.15	1.94	0.90	0.32	0.25	0.79

ANNEX

WCPFC4–2007/12, Attachment C

Rules and Procedures for the Protection, Access to and Dissemination of Data Compiled by the Commission [Revision 2.0]

The scope of these Rules and Procedures is data and information held by the WCPFC Commission or Secretariat, and by service providers or contractors acting on their behalf.

1. Basic principles relating to the dissemination of data by the WCPFC

1. Data and information held by the WCPFC Commission or Secretariat, and by service providers or contractors acting on their behalf, shall only be released in accordance with these Rules and Procedures; which reflect the policies of confidentiality and security determined by the Commission.

2. Data may be disseminated if the CCM providing the data to the WCPFC authorizes its release.

3. Persons duly authorised by the Executive Director within the WCPFC secretariat and service providers, who have read and signed the Commission's confidentiality protocol, shall have access to the data necessary to perform their WCPFC duties.

4. Officers of the Commission and its subsidiary bodies shall have access to the data necessary to perform their WCPFC duties.

5. CCMs shall have access to data to serve the purposes of the Convention, including data:

(a) covering vessels flying their flag in the WCPFC Convention Area

(b) covering any vessels fishing in waters under their jurisdiction

(c) covering vessels applying to fish in their national waters, unloading in their ports or transhipping fish within waters under their jurisdiction

(d) for the purpose of compliance and enforcement activities on the high seas, consistent with the Convention and the Conservation and Management Measures and other relevant decisions adopted by the Commission, subject to the rules and procedures for access and dissemination of such data that the Commission will adopt under paragraph 23

(e) for the purpose of scientific and other research, if the CCM that originally provided that data authorises the Commission to release them. In cases where a CCM elects to provide an ongoing authorisation for the release of such data, the CCM may at any time cancel this authorisation by notifying the Secretariat that it has revised its earlier decision.

6. To the greatest extent practical, the WCPFC Commission, Secretariat and their service providers, should disseminate data in a timely manner.

2. Risk classification and definition of confidentiality

7. Data covered by these Rules and Procedures will be classified in accordance with the risk classification methodology included in the Commission's Information Security Policy (ISP), which reflects inter alia the damage that would be done to the operations or creditability of the Commission as a consequence of the unauthorized disclosure or modification of such information. The classification is attached as Table 1.

8. Data covered by these Rules and Procedures were determined to be either public domain or non-public domain data in accordance with the definition of confidentiality established in the Commission's ISP.

3. Dissemination of Public Domain Data

9. Data in the public domain shall not reveal the individual activities of any vessel, company or person and shall not contain private information. Catch and Effort data in the public domain shall be made up of observations from a minimum of three vessels.

10. Annual catch estimates and aggregated catch and effort data that can be used to identify the activities of any vessel, company or person are not in the public domain.

11. Except for data as described in Paragraphs 9 and 10, the types of data listed in Appendix 1 have been designated to be Public Domain data.

12. Public Domain data shall be available to any persons for (a) downloading from the Commission's website and/or (b) release by the Commission on request.

13. The website should contain a statement describing the conditions associated with the viewing or downloading of Public Domain Data (for example, that the source of the data must be acknowledged), and should require the person requesting the data to "Accept" these conditions before viewing / downloading can begin.

4. Dissemination of Non-Public Domain Data

4.1 Definition of Non-Public Domain Data

14. Subject to the decisions of the Commission, all types of data not described in paragraph 11 shall be referred to as Non-Public Domain data.

15. A list of examples of Non-Public Domain data can be found in Appendix 2.

4.2 General rules for dissemination of, and access to, Non-Public Domain data

16. Access to and dissemination of Non-Public Domain data shall be authorised in accordance with these Rules and Procedures and the policies of confidentiality and security established in the Commission's ISP.

17. The WCPFC Secretariat shall log and report to the Commission all access and dissemination of Non-Public Domain data, including the name and affiliation of the person, the type of data accessed or disseminated, the purpose for which the data were requested, the date when the data were requested, the date when the data were released and authorizations that may have been required.

4.3 Access to Non-Public Domain data by the Staff of the Secretariat, the WCPFC Service Providers, and Officers of the Commission and its Subsidiary Bodies

18. Persons duly authorised by the Executive Director, within the WCPFC secretariat and service providers, including scientific experts engaged under Article 13 of the Convention, shall have access to the data necessary to perform their WCPFC duties. Officers of the Commission and its subsidiary bodies shall have access to the data necessary to perform their WCPFC duties. All such persons shall sign a Confidentiality Agreement with the Executive Director and maintain the data security standards of the Commission in respect of data to which they have access. The Executive Director shall maintain a Register of all such persons (including the purpose for which they require access to the data) and make the Register available to a CCM on written request.

4.4 Access to Non-Public Domain data by CCMs

19. CCMs shall have access to Non-Public Domain data to serve the purposes of the Convention, including data:

(a) covering vessels flying their flag in the WCPFC Convention Area

(b) covering any vessels fishing in waters under their jurisdiction

(c) covering vessels applying to fish in their national waters, unloading in their ports or transhipping fish within waters under their jurisdiction

(d) for the purpose of scientific and other research, if the CCM that originally provided that data authorises the Commission to release them. In cases where a CCM elects to provide an ongoing authorisation for the release of such data, the CCM may at any time cancel this authorisation by notifying the Secretariat that it has revised its earlier decision.

20. CCMs shall notify the Secretariat of a small number of representatives (preferably only 2) authorised to receive Non-Public Domain data. Such notification will include name, affiliation, and contact information (e.g. telephone, facsimile, email address). The WCPFC Secretariat will maintain a list of such authorized representatives. CCMs and the Secretariat shall ensure the list of CCM representatives is kept up to date and made available.

21. The authorized representative(s) of the CCMs are responsible for ensuring the confidentiality and security of the Non-Public Domain data according to its risk classification and in a manner consistent with security standards established by the Commission for the WCPFC Secretariat.

22. The Non-Public Domain data described in paragraph 19 will be made available by the Secretariat to authorised representatives of the CCMs for release by the Commission on request and, where appropriate, downloading from the Commission's website in accordance with the Commission's ISP.

23. For the purpose of compliance and enforcement activities on the high seas, Non-Public Domain data will be made available subject to separate rules and procedures for the access and dissemination of such data, that the Commission will adopt for these purposes.

24. VMS data will be made available for scientific purposes, subject to the separate rules and procedures referred to in paragraph 23 above.

25. Access to Non-Public Domain data by CCMs shall be administered by the Executive Director on the basis of these Rules and Procedures and a Framework which will be established by the Commission. The Framework may include, inter alia, guidelines for access to different data types, the possibility of standing authorizations, compliance with the Commission's policy for the provision of data and a mechanism for resolving disputes. CCMs shall provide a written request for such data to the Executive Director specifying the purpose for which the data is required.

26. The Executive Director will implement the Framework and authorize access to and dissemination of Non-Public Domain data.

27. Unless otherwise decided by the Member or CCM responsible for its external affairs, Participating Territories shall have the same access rights to data as CCMs.

28. A CCM that has not fulfilled its obligations to provide data to the Commission for two consecutive years shall not be granted access to Non-Public Domain data until all such matters are rectified. A CCM whose representative, authorized in accordance with paragraphs 20 and 21 above, failed to observe the rules stipulated in these Rules and Procedures shall not be granted access to Non-Public Domain data until the appropriate actions have been taken.

4.5 Exchange of data with other regional fisheries management organisations

29. If the Commission enters into agreements for the exchange of data with other regional fisheries management organisations (RFMOs), such agreements must include requirements that the other RFMO provides equivalent data on a reciprocal basis and maintains the data provided to them in a manner consistent with the security standards established by the Commission. The data which may be exchanged is specified in Appendix 3. At each annual session the Executive Director will provide copies of data exchange agreements that exist with other RFMOs and a summary of the data exchanges that occurred during the previous 12 months under such agreements. For the purposes of these Rules and Procedures, the following organisations will be treated as being equivalent to a RFMO:

- International Scientific Committee (ISC)
- Secretariat of the Pacific Community (SPC)

4.6 Disseminations of Non-Public Domain data in other circumstances

30. Non-Public Domain data will be made available by the Secretariat to any persons (including universities, researchers, NGOs, media, consultants, industry, federations, etc) if the CCM that originally provided that data authorises the Commission to release them. In cases where a CCM elects to provide an ongoing authorisation for the release of such data, the CCM may at any time cancel this authorisation by notifying the Secretariat that it has revised its earlier decision. Unless otherwise requested by the provider of the data:

(a) Persons that request Non-Public Domain data shall complete and sign the Data Request Form and sign the Confidentiality Agreement and provide them to the Commission in advance of obtaining access to said data.

(b) The Data Request Form and Confidentiality Agreement shall then be forwarded to the CCM that originally provided the requested data and the provider shall be requested to authorise the Commission to release the data.

(c) Such persons shall also agree to maintain the data requested in a manner consistent with the security standards established by the Commission for the WCPFC Secretariat.

31. CCMs that have provided Non-Public Domain data to the Commission shall notify the Secretariat regarding their representatives with the authority to authorise the release of Non-Public Domain data by the Commission. Decisions whether to authorise the release of such data shall be made in a timely manner.

4.7 Force majeure

32. The Executive Director may authorise the release of Non-Public Domain data to rescue agencies in cases of force majeure in which the safety of life at sea is at risk.

5. Periodic Review

33. The Commission or its subsidiary bodies will periodically review these Rules and Procedures, and subsidiary documents, and the rules and procedures referred to in paragraphs 23 and 24 above, and amend these if necessary.

6. Final Clause

34. These Rules and Procedures do not prevent a CCM from authorizing the release of any data it has provided to the WCPFC.

Appendix 1 of WCPFC4–2007/12, Attachment C

Public Domain data

The following types of data are considered to be in the public domain:

1) annual catch estimates stratified by gear, flag and species for the WCPFC Statistical Area;

2) annual catch estimates stratified by gear, flag, species, and waters under the jurisdiction of CCMs and the high seas in the WCPFC Statistical Area;

3) the annual numbers of vessels active in the WCPFC Statistical Area stratified by gear type and flag;

4) catch and effort data aggregated by gear type, flag, year/month and, for longline, 5° latitude and 5° longitude, and, for surface gear types, 1° latitude and 1° longitude – and made up of observations from a minimum of three vessels;

5) [biological data (if adequate time has passed to allow the scientists that organised for the collection of such data to publish a paper analysing it)];

6) tagging data;

7) the WCPFC Record of Fishing Vessels;

8) [information on vessel and gear attributes compiled from other sources];

9) any vessel record established for the purpose of the Commission's VMS;

10) oceanographic and meteorological data;

11) [social data]; and

12) Part 1 of the Annual Report to the Commission by CCMs.

In regard to paragraphs 1, 2, 3 and 4 above - data describing vessels based in a territory of the State in which they are flagged may be stratified (or aggregated) by the name of the territory.