SEVENTH REGULAR SESSION
Honolulu, Hawaii, USA
6-10 December 2010

PROPOSAL FOR PILOT OBSERVER RESEARCH PROGRAMME FOR SEABIRD BYCATCH RISK REDUCTION

WCPFC7-2010-IP/04
1 December 2010

Paper prepared by the Secretariat for the Agreement on the Conservation of Albatrosses and Petrels (ACAP)

Proposal for Pilot Observer Research Programme for Seabird Bycatch Risk Reduction

Summary

The Commission's support is sought for a pilot observer research programme to validate the seabird ecological risk assessment (ERA) presented at WCPFC-SC6. This pilot observer programme would be conducted over a period of one year in a seabird hotspot indentified by the ERA in the Tasman Sea region. Specifically, the Commission is requested to task:

a). the Scientific Committee to design a pilot research observer programme to:

1. validate the findings of the ERA, with regards to the identification of the 'hotspots' for seabird interactions;
2. assess the efficacy of seabird bycatch mitigation measures being used in accordance with WCPFC CMM 07/04; and
3. provide data with which to undertake a review of CMM 2007-04; and

b) the Technical and Compliance Committee to identify the operational and resource requirements necessary to implement the pilot observer programme.

Background

At the sixth meeting of the WCPFC Scientific Committee an ecological risk assessment (ERA) was presented (WCPFC-SC6-2010/EB-IP 01) using spatial risk indicators to identify potential seabird interactions with longline fisheries in the Western and Central Pacific. The ERA used a spatially explicit Productivity-Susceptibility Analysis (PSA) by integrating information on fishing effort; species range distributions, species population productivity and likelihood of capture in surface longline fisheries to determine: (a) the areas of greatest likelihood of seabird-fisheries interactions; and (b) the species where greatest risk of adverse effects of fishing-induced mortality would occur.

An analysis of the ERA results reveals that there are a relatively small number of areas within the WCPFC Convention Area where there is a high likelihood of species-level population effects occurring. These events are also likely to be further restricted to specific seasons, rather than being spread throughout the year. Rather than expand existing observer programmes, which are already complex and over-taxed, this information provides an opportunity to develop a small, targeted observer programme that can provide reliable data to inform management decisions, particularly with regard to the review of CMM 2007-04.

One area considered identified in the ERA as a potential seabird interaction 'hotspot' is in the Tasman Sea, to the south of Tasmania and in areas south and north east of New Zealand, during the austral autumn and winter seasons. The other areas identified as 'hotspots' are: a) in an area to the south of Japan in the boreal winter, and b) in eastern western Pacific extending from the Hawaiian islands to east of Japan in the Boreal autumn and winter; c) a moderate risk area surrounding Fiji (Figure 1).

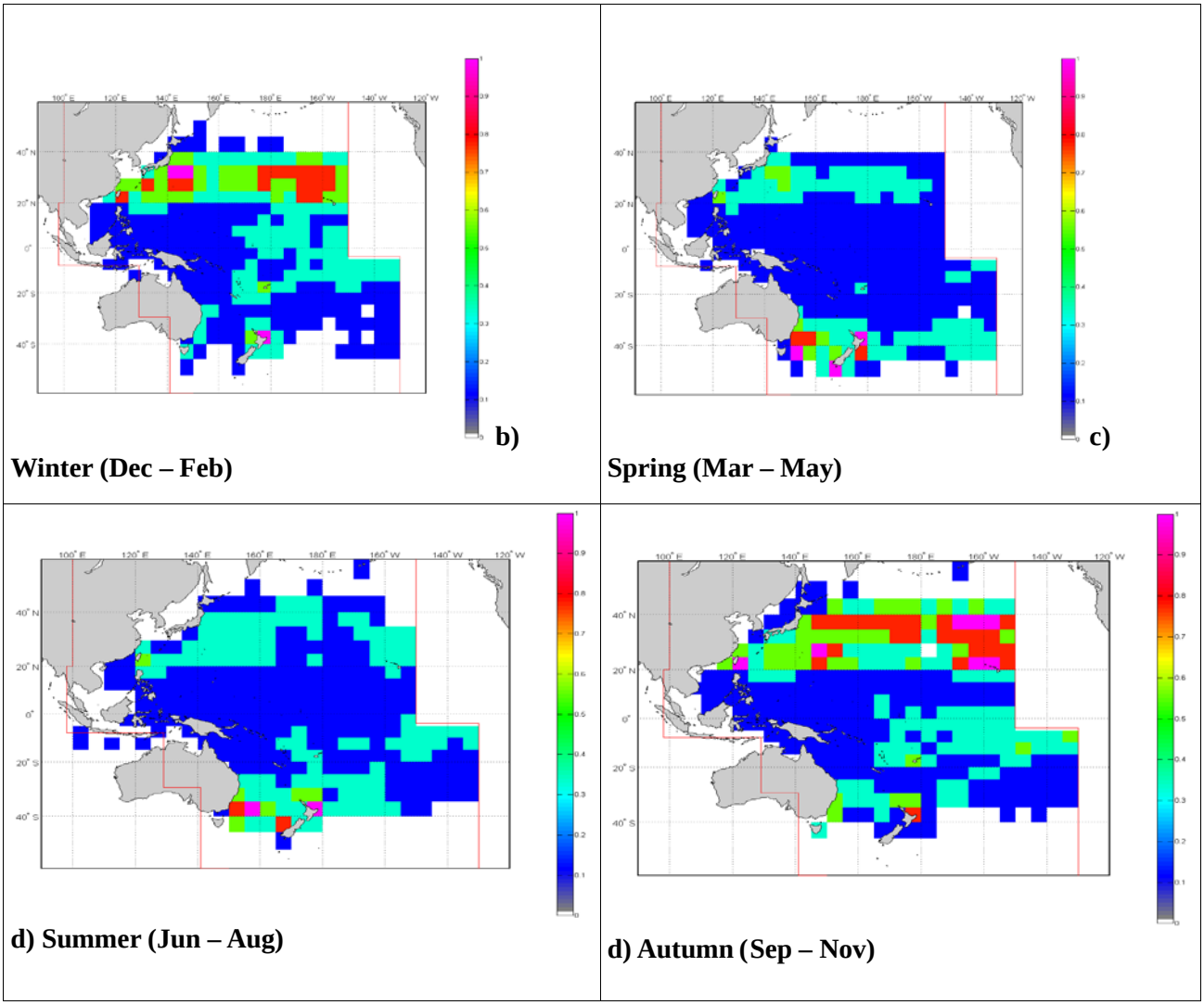


Figure 1 (taken from Fig 8, WCPFC-2010-SC6-EBWG-IN01). Risk areas by 5x5 degrees square of latitude and longitude for the WCPFC Convention Area. Green areas denote moderate risk, Red are high risk, and Pink are very high risk for seabird interacting with longline fisheries.

WCPFC-SC2 (Final Summary Report, para. 32) noted that in order to adequately characterise rare events, such as seabird bycatch, an observer programme should aim to observe 20% of fishing effort, and that when areas of greater importance are found, that the observer programme be restructured to optimize coverage in these areas. An analysis of total fishing effort in high risk areas identified in the ERA indicates a relatively small number of trips would likely be required to provide this level of coverage, given the relatively low fishing effort in these areas.

The map in Annex 1 shows the risk score (maxima) for seabird interactions by 5 degree latitude by 5 degree longitude square over all seasons in the Tasman Sea hotspot area. An analysis of total effort (in hundreds of hooks) in Table 1 of Annex 2 shows that practically all very high risk (pink) and high risk (red) areas occur in the Exclusive Economic Zones (EEZs) of Australia and New Zealand. In the medium risk (green) areas, just over half of the effort (59%) occurs in high seas areas, where more contributions of effort by Distant Water Fishing Nations is more extensive.

This information will be useful for deriving the number of observed trips needed to provide an adequate level of observer coverage of those areas identified as seabird hotspots (those denoted as

high or very high risk). A decision on the actual level of observer coverage required would need to be determined by the Scientific Committee, when developing the pilot observer programme.

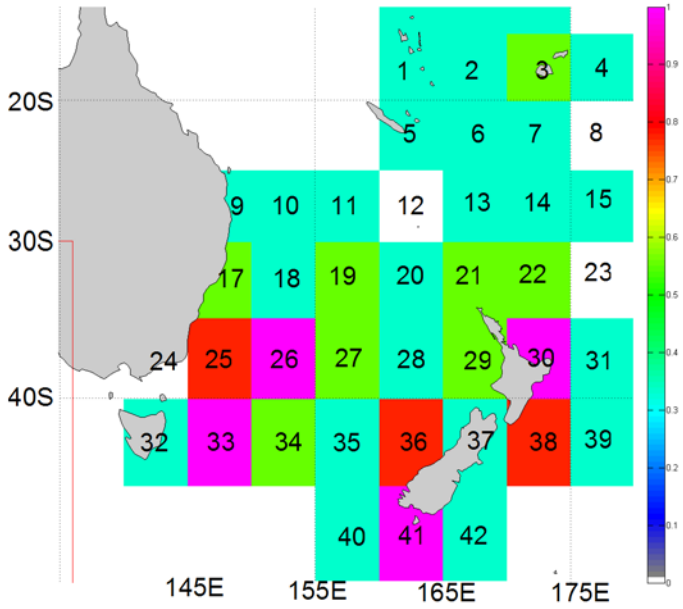
Initially, is proposed that a pilot, one-off dedicated seabird observer programme be undertaken in the Tasman Sea region. If the programme were successful, it could be replicated in future years to address hotspots in other regions, e.g. the north Pacific.

It should be noted that many of the 'hotspots' in the Tasman Sea fall within domestic EEZs, and as a consequence, observer coverage could be provided from domestic observer programmes. Two important areas fall entirely within high seas areas, and therefore would require deployment of observers under the WCPFC regional observer programme. It is important to characterise the seabird-fishery interactions in these high-seas areas as the fishing effort concerned may be using different mitigation strategies to those used in New Zealand and Australian EEZ waters, and seabird assemblages in these areas are known to be of high vulnerability to capture in surface longline fisheries (particularly large albatross species). Notwithstanding the logistical difficulties of deploying observers in high seas areas, the number of vessels and flags likely to fish these areas is limited.

It was noted at WCPFC-SC6 that it has been difficult to access observers from the regional observer programme for high seas fishing trips. In view of the specialist nature of this observer programme, it is proposed that a small team of trained seabird observers be identified from both domestic and regional observer programmes to undertake this work. The specific data to be collected would be defined by the WCPFC SC7, with operational details of the programme being determined by WCPFC TCC7.

Annex 1

Maximum risk areas from Figure 1 across four seasons, with 5 degree longitude and 5 degree latitude squares. Risk ratings are white – low risk, turquoise – low to medium risk, green – medium risk, red – high risk, pink – very high risk. Numbers in the squares on the figure identify that square in reference to fishing effort described in Table 1.



Annex 2

Table 1. The effort (in hundreds of hooks) for 5 degree longitude by 5 degree latitude squares.

Column one colours key relate to the maximum risk score across all seasons shown in Figure 1 and 2 where white – low risk; green – medium risk; red – high risk; and pink – very high risk. The numbers of hooks (hundreds) are shown for 2008 and 2009, as totals across all fleets (column three), and by Distant Water Fishing Nation (DWFN) (column four), while efforts flags who submit more detailed data to SPC (SPC flags) are shown as hundreds of hooks (column five), by the numbers of boats (column six) and trips (column seven) in each square. The proportion of total fishing effort done by DWFN flags is shown in column 8. Where values are not presented (e.g. 2008 data for square 29) no data were available.

Square reference number (colour indicates risk level)	Year	Total Hooks / square (hundreds)	DWFN Hooks / square (hundreds)	SPC flag Hooks / square (hundreds)	SPC flag boats / square	SPC flag trips / square	Proportion of hooks to DWFN flags
19	2008	879.97	71	808.97	15	21	0.080684569
19	2009	1249.04	65.24	1183.8	15	23	0.052232114
20	2008	9233.61	8340.89	892.72	5	8	0.90331842
20	2009	12456.42	9721.36	2735.06	9	11	0.78042969
21	2008	9248.66	9248.66				1
21	2009	4805.02	4061.22	743.8	6	6	0.845203558
22	2008	5680.38	1524.01	4156.37	25	73	0.26829367
22	2009	7420.94	1533.24	5887.7	33	104	0.206609944
23	2008	6514.19	5129.33	1384.86	23	44	0.787408719
23	2009	8870.62	6793.32	2077.3	25	56	0.765822457
27	2008	22589.63	20715.13	1874.5	3	3	0.917019447
27	2009	26952.72	26952.72				1
28	2008	292.89	292.89				1
28	2009	4810.4	3803.8	1006.6	3	3	0.790745052
29	2009	36	36				1
30	2008	243		243	6	7	0
30	2009	461.5		461.5	6	10	0
31	2008	9758.99		9758.99	29	131	0
31	2009	14431.11	493	13938.11	34	156	0.034162306
35	2008	3718.44	3718.44				1
35	2009	3860.4	3860.4				1
36	2009	1973.8	553.5	1420.3	4	7	0.280423548
37	2008	3906.3		3906.3	10	23	0
37	2009	6481.3	453.9	6027.4	11	25	0.070032247
38	2008	59		59	3	4	0
38	2009	151		151	5	10	0
39	2008	98.5		98.5	4	4	0
39	2009	538.37		538.37	11	17	0
41	2009	231.4		231.4	3	4	0
42	2008	2629.95		2629.95	4	8	0
42	2009	853.7		853.7	4	4	0