

# **Review of catch and effort for SBT by Korean tuna longline fishery in the CCSBT convention area**

Sung Il LEE, Zang Geun KIM, Jeong Eun KU, Mi Kyung LEE and Dong Woo LEE

*National Fisheries Research and Development Institute (NFRDI)  
216 Gijang-Haeanro, Gijang-eup, Gijang-gun, Busan 619-705, Republic of Korea*

## **Abstract**

This document describes updated/revised historical catch and effort data of Korean tuna longline vessels fishing for southern bluefin tuna from 1996 to 2013.

## **1. Introduction**

In accordance with provision for “Data Exchange Requirements” of the CCSBT, Korea has submitted the catch and effort data of Korean tuna longline vessels fishing for southern bluefin tuna (SBT). Until 2012, Korean domestic law (the Distant Water Fisheries Development Act) regulated that the time for data submission was within 30 days (home-based) or 60 days (foreign-based) after completion of their operations. Hence the coverage of data was low when data should be submitted to the Secretariat. In relation to this matter, the Act was revised that the time for data submission was changed to monthly report in electronic format for improving the data collection system to meet the timely submission of data and to have a chance to review the collected data. This measure put into effect from December 2012 so that Korea improved the coverage to 100% in recent year.

The updated/revised catch and effort data were re-submitted to the Secretariat in 25<sup>th</sup> August 2014, as requested at the ESC18 meeting. Therefore, the aim of this document is to review updated/revised historical catch and effort trends for SBT by Korean tuna longline fishery and to describe what has been changed through the data.

## **2. Updated Catch and Effort**

The data from 1996 to 2013 were updated/revised through all available logbooks, including data reported after vessels had returned to port. However, the data prior to 1995 could not be revised at this time. This was because there was inaccurate information in some data.

Table 1 indicates the difference between data submitted and revised. The effort data revised for 2000, 2003-2006 showed lower values than those of submitted. This reason was that data on non-SBT fishing vessels that targeted bigeye tuna and yellowfin tuna were excluded from the dataset. In addition, there were some errors when inputting SBT catch in some years.

Figure 1 and 2 show the raised historical catch and effort to represent the total catch and effort. And Fig. 4 shows the geographical distribution of effort, catch and nominal CPUE of Korean tuna longline vessels targeting for SBT from 1991-2013 (refer to “CCSBT-ESC/1409/SBT Fisheries/Korea” for more information on its trend).

### **3. Revised Nominal CPUE**

Figure 3 shows the revised nominal SBT CPUE trends of Korean tuna longline fishery with the CPUE calculated from the dataset submitted. Both CPUEs showed a similar trend, but the revised CPUE was relatively higher in 1996, 2000, 2003-2007 and lower in 1998 than in other years.

Table 1. The difference between data submitted and revised

YEAR	Submitted (A)		Revised (B)		Difference (B-A)	
	No. of hooks	No. of fishes	No. of hooks	No. of fishes	No. of hooks	No. of fishes
1991	164,490	3,357				
1992	314,279	558				
1993	328,830	1,231				
1994	441,655	3,695				
1995	1,116,946	6,392				
1996	1,469,305	5,803	2,629,639	14,689	1,160,334	8,886
1997	4,941,773	20,397	7,207,753	27,985	2,265,980	7,588
1998	2,880,645	9,662	3,190,779	7,817	310,134	-1,845
1999	3,452,111	10,839	5,741,258	17,773	2,289,147	6,934
2000	3,665,546	6,399	3,177,719	7,163	-487,827	764
2001	3,292,298	8,128	5,274,532	12,361	1,982,234	4,233
2002	4,752,753	15,361	5,466,885	17,136	714,132	1,775
2003	1,773,187	4,136	908,390	4,073	-864,797	-63
2004	1,626,501	1,803	1,240,618	1,974	-385,883	171
2005	619,197	599	373,140	908	-246,057	309
2006	947,808	3,726	756,666	3,757	-191,142	31
2007	1,744,694	4,145	2,748,010	7,824	1,003,316	3,679
2008	501,330	1,817	4,576,594	17,051	4,075,264	15,234
2009	2,513,349	10,982	5,914,571	23,228	3,401,222	12,246
2010	2,068,776	6,689	3,656,491	13,201	1,587,715	6,512
2011	2,488,541	8,415	4,047,946	13,474	1,559,405	5,059
2012	3,474,083	18,213	3,635,388	19,257	161,305	1,044
2013	2,687,779	15,904	2,687,779	15,904	0	0

\* These data (submitted and revised) are not raised.

Table 2. Effort (no. of hooks x1,000)for SBT by Korean tuna longline fishery by statistical area

Year	Total	Statistical area												
		1	2	3	4	7	8	9	11	13	14	15		
1991	164,490			4,650	132,140	27,700								
1992	314,279						314,279							
1993	328,830		3,150				80,430	245,250						
1994	441,655						96,281	345,374						
1995	1,116,946		6,120			2,720	591,899	516,207						
1996	6,794,673		6,460				2,071,634	4,623,818					92,761	
1997	9,059,075	3,676	185,756				3,770,384	5,001,197			82,961	15,101		
1998	16,141,768					167,247	7,994,877	7,660,712		243,049	75,883			
1999	11,771,800		80,662			953,301	4,097,702	6,589,378		16,823	6,766	27,168		
2000	9,688,669		17,684			487,129	5,769,960	3,314,824		88,645	10,427			
2001	6,816,196		11,889				3,756,179	3,027,581		20,547				
2002	5,466,885		16,750			58,245	1,321,515	4,054,165		3,440	12,770			
2003	1,286,960						110,053	1,176,907						
2004	1,562,370							1,551,841				10,528		
2005	430,286		165,131				10,863	119,350		9,859	125,083			
2006	1,117,439							1,093,958		4,578	18,903			
2007	5,810,738							5,706,088		30,026	74,624			
2008	6,931,948		296,172				3,939,230	2,673,629	5,089		17,827			
2009	6,769,173		3,525			15,565	3,082,558	3,641,087			16,870	9,568		
2010	4,104,383		110,995				2,021,997	1,971,391						
2011	4,047,946		76,319				3,252,030	719,597						
2012	3,635,388		10,197				1,695,244	1,929,947						
2013	2,687,779		39,180				1,537,123	1,111,476						

\* These data are raised to represent the total effort.

Table 3. Catch (in number) for SBT by Korean tuna longline fishery by statistical area

Year	Total	Statistical area											
		1	2	3	4	7	8	9	11	13	14	15	
1991	3,357			93	2,991	273							
1992	558						558						
1993	1,231		0				162	1,069					
1994	3,695						225	3,470					
1995	6,392		4			3	1,461	4,924					
1996	37,955		5				6,778	30,743				429	
1997	35,173	1	929				5,964	27,956		279	44		
1998	39,545					228	19,209	19,446		339	324		
1999	36,442		51			1,347	7,550	27,453		10	23	8	
2000	21,840		85			543	10,909	10,077		223	3		
2001	15,974		16				7,118	8,776		65			
2002	17,136		27			70	1,768	15,201		6	64		
2003	5,770						130	5,640					
2004	2,486							2,477			9		
2005	1,047		490				16	347		8	186		
2006	5,548							5,491		35	22		
2007	16,544							16,373		15	156		
2008	25,826		919				10,494	14,383	2		29		
2009	26,584		2			39	6,394	19,990			7	152	
2010	14,818		99				5,249	9,470					
2011	13,474		52				8,315	5,107					
2012	19,257		19				5,680	13,558					
2013	15,904		14				5,969	9,921					

\* These data are raised to represent the total catch.

Table 4. CPUE (fishes/hooks (X1,000)) for SBT by Korean tuna longline fishery by statistical area

Year	Total	Statistical area												
		1	2	3	4	7	8	9	11	13	14	15		
1991	20.41			20.00	22.64	9.86								
1992	1.78						1.78							
1993	3.74		0.00				2.01	4.36						
1994	8.37						2.34	10.05						
1995	5.72		0.65			1.10	2.47	9.54						
1996	5.59		0.80				3.27	6.65					4.62	
1997	3.88	0.34	5.00				1.58	5.59		3.36	2.91			
1998	2.45					1.36	2.40	2.54		1.39	4.27			
1999	3.10		0.64			1.41	1.84	4.17		0.61	3.33	0.30		
2000	2.25		4.83			1.11	1.89	3.04		2.51	0.29			
2001	2.34		1.30				1.89	2.90		3.14				
2002	3.13		1.61			1.20	1.34	3.75		1.74	5.01			
2003	4.48						1.18	4.79						
2004	1.59							1.60			0.84			
2005	2.43		2.97				1.49	2.91		0.82	1.48			
2006	4.97							5.02		7.74	1.17			
2007	2.85							2.87		0.49	2.10			
2008	3.73		3.10				2.66	5.38	0.30		1.61			
2009	3.93		0.65			2.50	2.07	5.49			0.41	15.91		
2010	3.61		0.89				2.60	4.80						
2011	3.33		0.68				2.56	7.10						
2012	5.30		1.86				3.35	7.03						
2013	5.92		0.36				3.88	8.93						

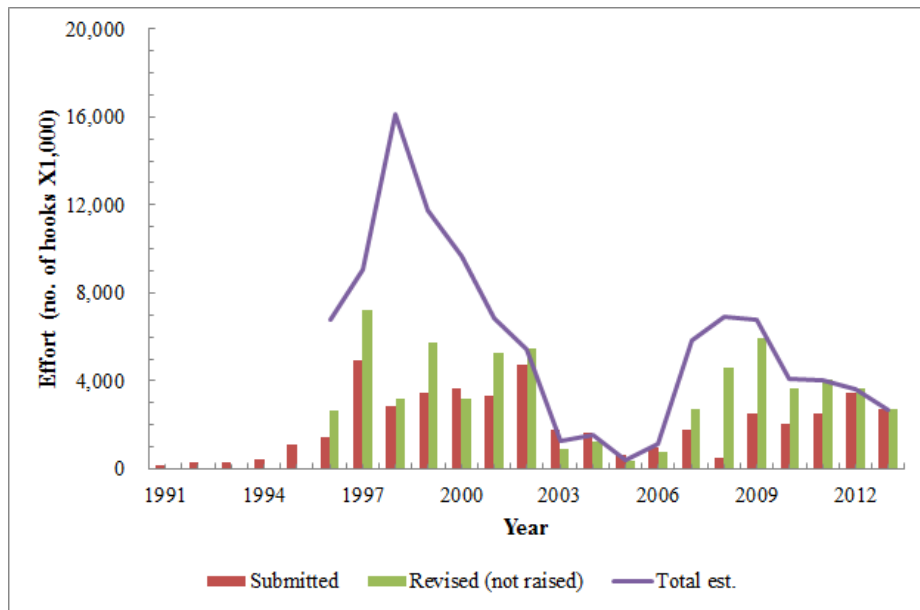


Fig. 1. Raised and not raised effort for SBT by Korean tuna longline fishery, 1996-2013.

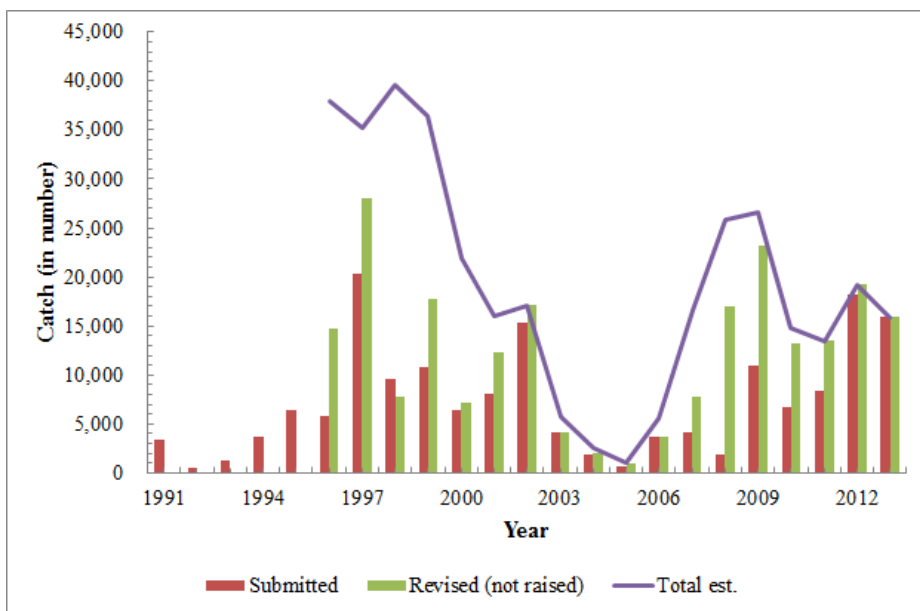


Fig. 2. Raised and not raised catch for SBT by Korean tuna longline fishery, 1996-2013.

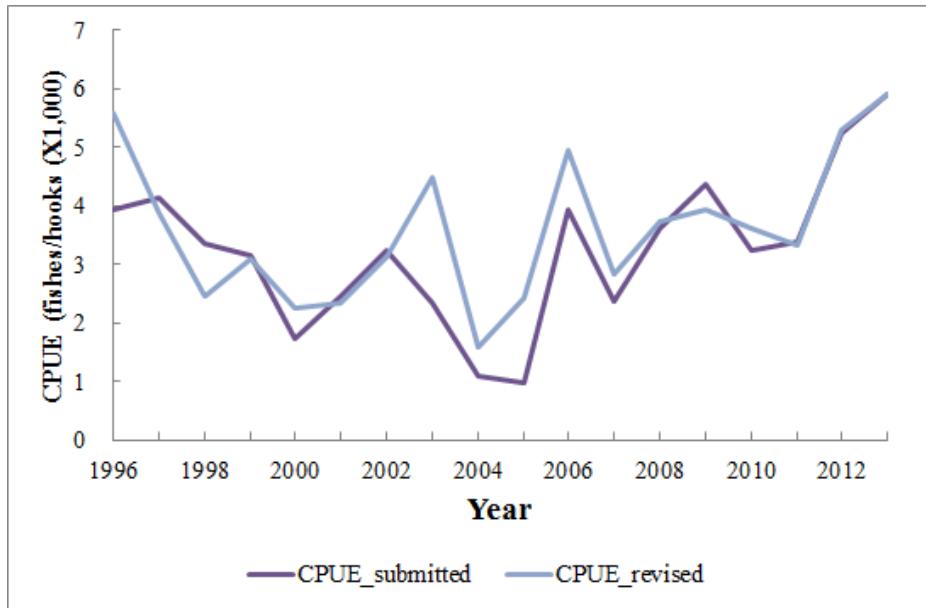


Fig. 3. Revised CPUE for SBT by Korean tuna longline fishery, 1996-2013.



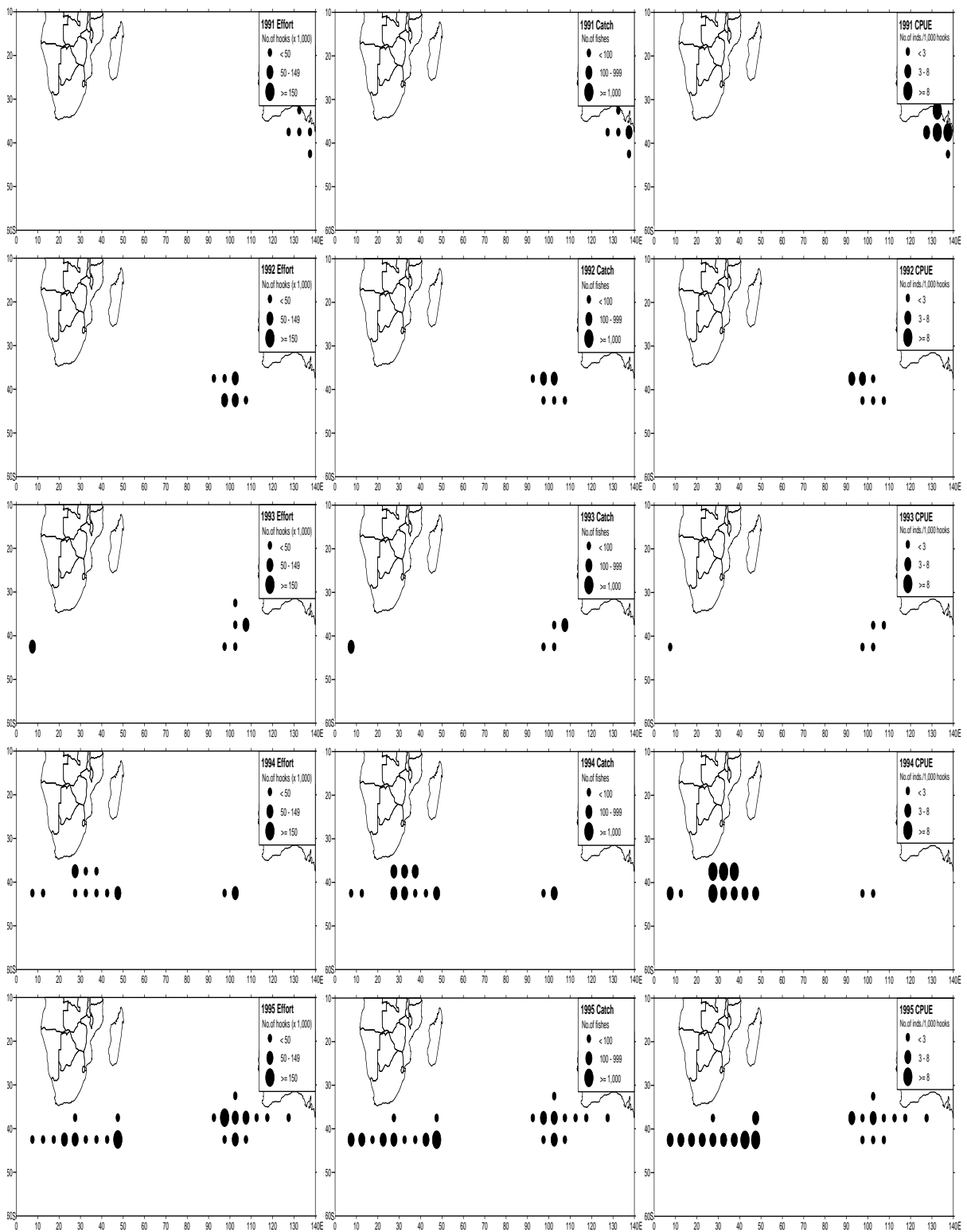


Fig. 4. The geographical distributions of effort, catch and nominal CPUE for SBT by Korean tuna longline fishery, 1991-2013. Revised data were used from 1996 to 2013.

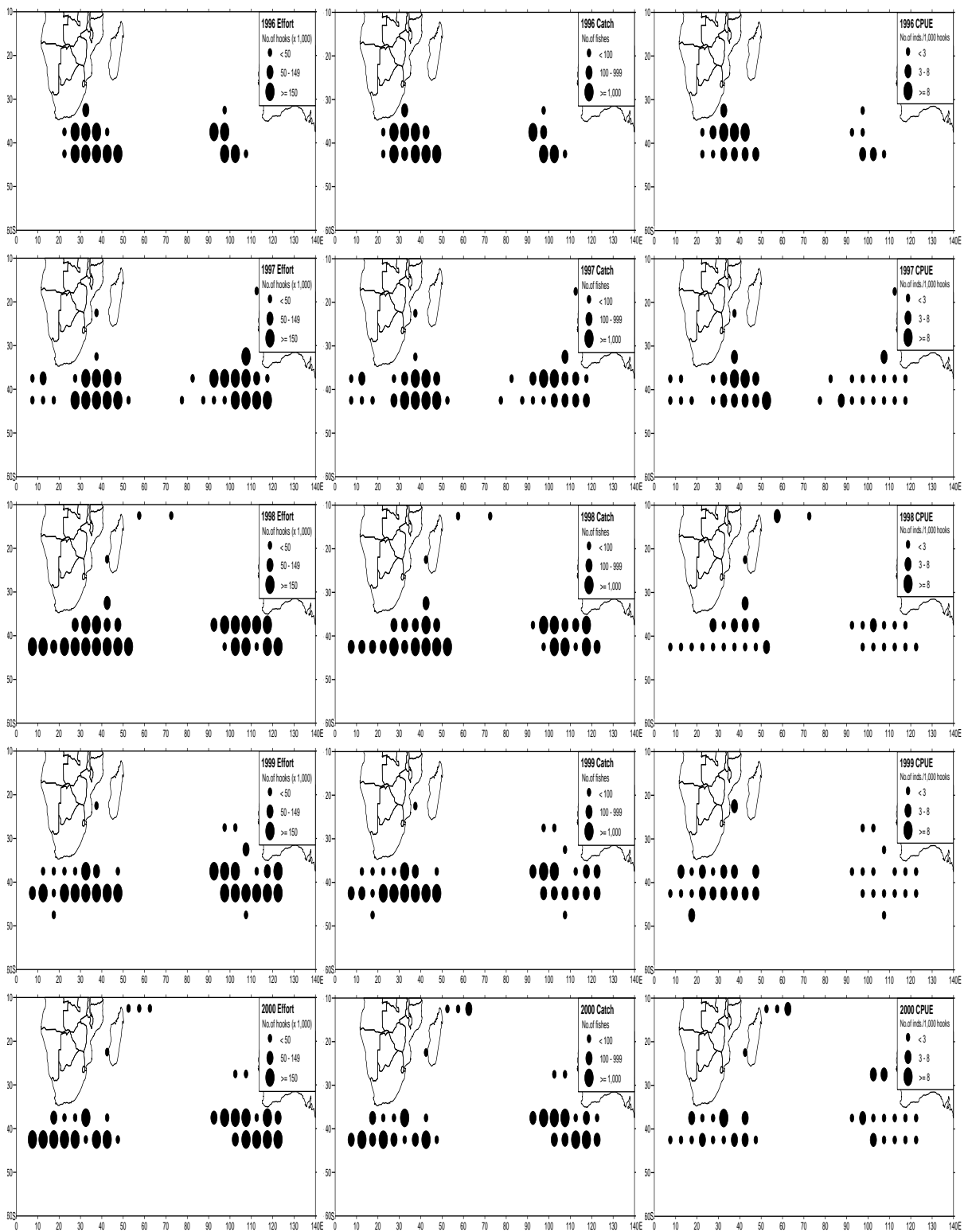


Fig. 4. Continued.

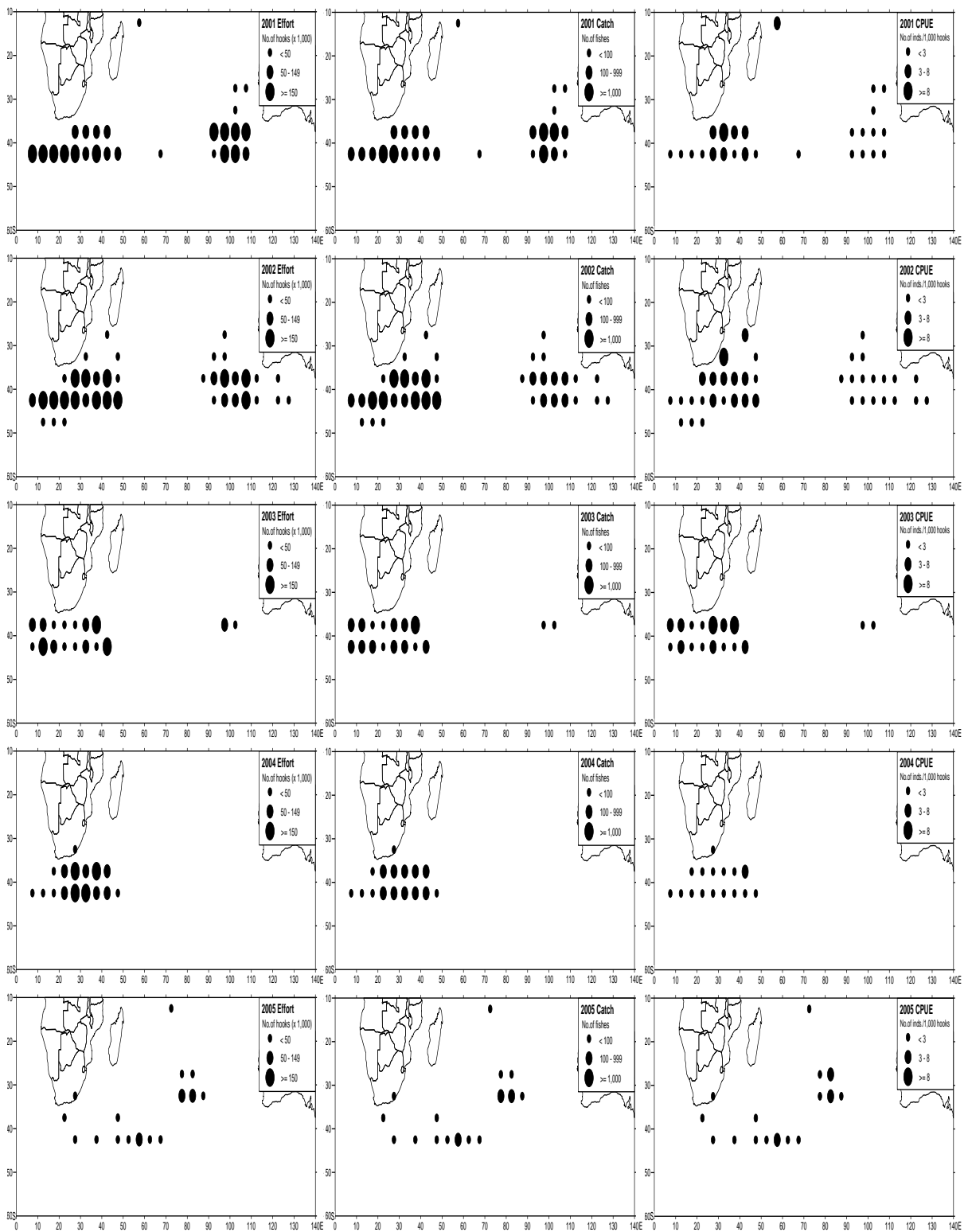


Fig. 4. Continued.

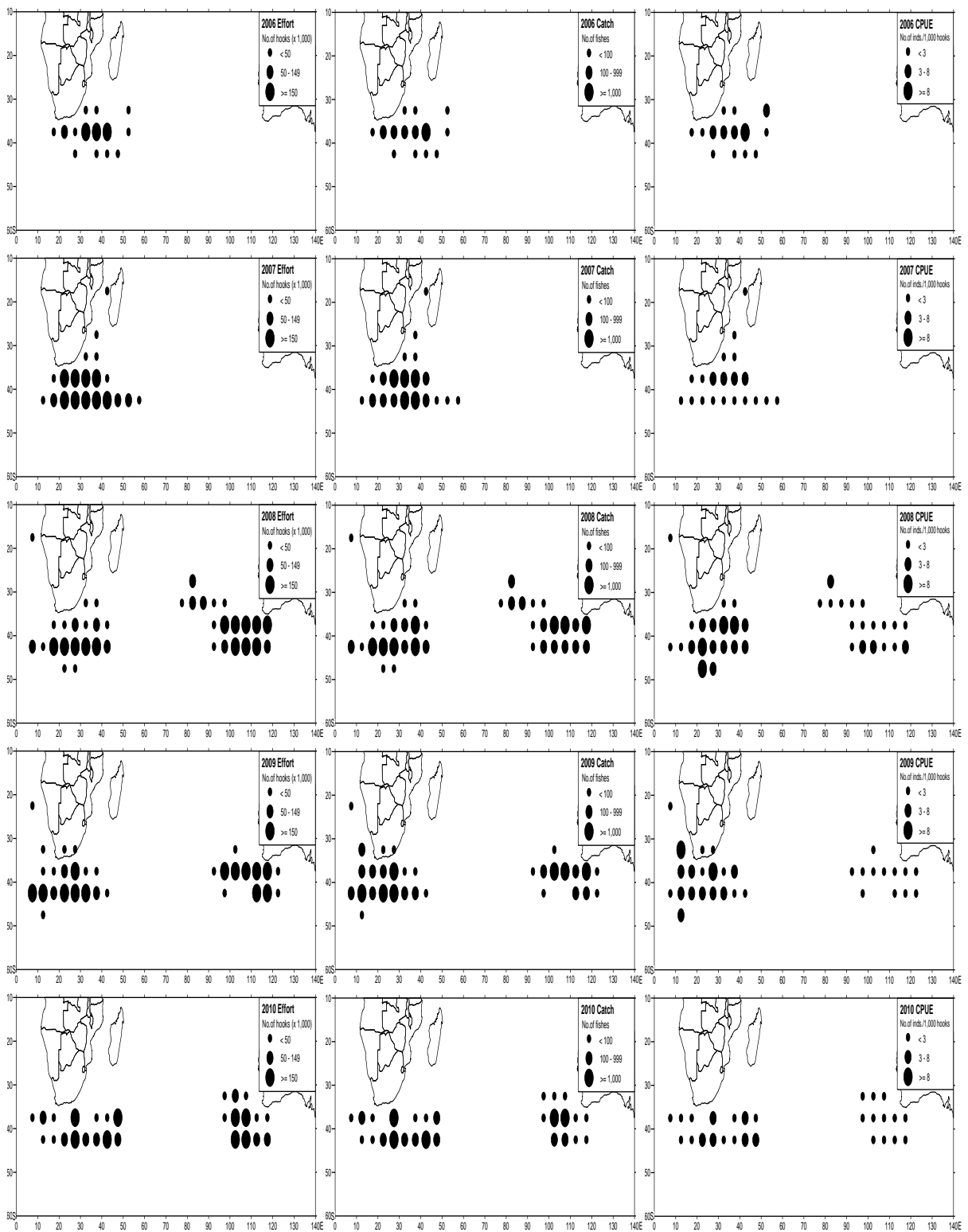


Fig. 4. Continued.

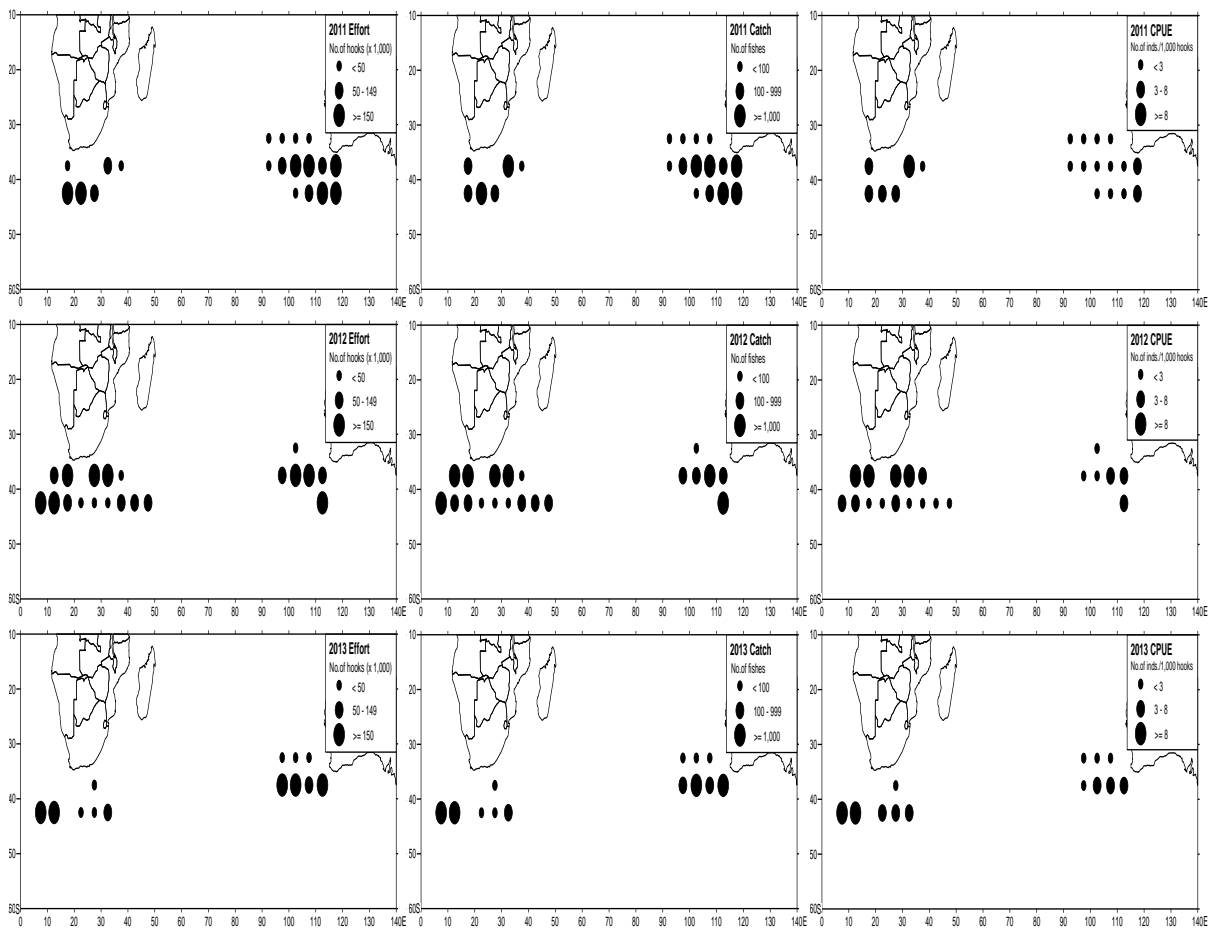


Fig. 4. Continued.