



**SCIENTIFIC COMMITTEE
SEVENTH REGULAR SESSION**

9-17 August 2011
Pohnpei, Federated States of Micronesia

ISC Data Exchange with WCPFC

WCPFC-SC7-2011/ST-IP-10

ISC¹

¹ International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean



ISC Data exchange with WCPFC

Izumi Yamasaki & Akiko Nagata

National Research Institute of Far Seas Fisheries, Fisheries Research Agency
5-7-1, Orido, Shimizu, Shizuoka, 424-8633, Japan

July 2011

ISC Data exchange with WCPFC

Izumi Yamasaki & Akiko Nagata

National Research Institute of Far Seas Fisheries, Fisheries Research Agency

5-7-1, Orido, Shimizu, Shizuoka, 424-8633, Japan

Introduction

We have been preparing for data exchange with WCPFC in 2012 for four data sets of three categories, Category Ic (annual catch), Ie (annual effort), II (aggregated catch and effort), and III (size frequency). To have a precise comprehension of data inventory of both ISC and WCPFC, the Statistical Working Group proceeded to compare the inventories of the ISC and WCPFC databases, based on the WCPFC submitted inventories of Category II and III in 2010 and the ISC database inventory. In addition, in 2011 the ISC members have submitted updated additional data and WCPFC have sent new data sets corresponding to Category Ic. Thus we report here a revision of the comparison table of the ISC and WCPFC databases, and also the data submission condition of the ISC members.

Renewal and modification of WCPFC data inventory

No modification or change was seen between 2010 and 2011 WCPFC data inventories of Category II and III except for addition of new data.

General review

Data submission condition depends on the members and fishing gears. In many cases, ISC data holdings and WCPFC data holdings do not match in periods and fishing gears. China has not been submitting and directly registering data to ISC database for Categories I, II, and III.

Category I

- Only ISC has Japan Set-net and Troll data.
- Also, ISC has Canada Troll data of 1939 to 1951, but WCPFC does not.
- Korea submitted longer period of data to ISC than WCPFC.
- Mexico has not submitted data to WCPFC.
- Only ISC has the USA data of certain fleets.

Category II

- ISC has Japan Purse seine data, but WCPFC does not.

Yamasaki & Nagata (2011)

- Many of the Canada and the USA data sets are exclusive to the ISC database.
- Korea data sets do not have area codes, thus resolution is unknown. Periods of data sets are almost matched in ISC and WCPFC.
- Taiwan does not have a clear definition of fishing gears in the ISC database. Regarding periods of data sets, WCPFC possesses more data.

Category III

- Direct comparison was difficult because of data resolution differences. In total, WCPFC often has higher resolution in data.
- Only ISC has data sets of Canada.
- Only WCPFC has data sets of China.
- ISC holds more massive data of Japan until 1992.
- Data sets of Korea does not have area codes, thus resolution is unknown. ISC possesses more continuous data in period.
- ISC exclusively has data of certain fishing gears of the USA, and vice versa.

Questions for practical operation of data exchange

- Qualification of data for exchange (e.g., fishing gears: WCPFC has data for only four fishing gears (longline, hand-line, ring net and purse seine). Do they want data of other gears? Or do they target only for these four fishing gears?)
- ISC and WCPFC adopt different data formats and codes. How can we treat these differences?
- Some data sets of WCPFC have higher resolution and longer periods than ISC data sets. How do we balance the unequal quality of data between WCPFC and ISC?
- Some members only submitted data to either ISC or WCPFC. Do we exchange these data too?

Line No.	Country	Gear	Species	Holdings	Year																																
					1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
72			Pacific bluefin tuna	ISC																						★											
73			Striped marlin	WCPFC																																	
74			Swordfish	WCPFC																																	
75	Mexico	Pole-and-line	Albacore	ISC																								★									
76		<i>Pole-and-line (PL)</i>	Pacific bluefin tuna	ISC																																	
77	Mexico	Purse seine	Albacore	ISC																								★									
78			Pacific bluefin tuna	ISC																					★	★	★	★	★	★	★	★	★	★	★	★	
79	Mexico	Sport	Striped marlin	ISC																																	
80			Swordfish	ISC																																	
81	Taiwan	Gillnet	Albacore	ISC																																	
82				WCPFC																																	
83			Pacific bluefin tuna	ISC																																	
84			Striped marlin	WCPFC																																	
85			Swordfish	WCPFC																																	
86	Taiwan	<i>Harpoon (HP)</i>	Albacore	ISC																																	
87			Pacific bluefin tuna	ISC																																	
88			Striped marlin	ISC																																	
89			Swordfish	ISC																																	
90	Taiwan	<i>Large-scale longline (LTLL)</i>	Albacore	ISC																																	
91			Pacific bluefin tuna	ISC																																	
92			Striped marlin	ISC																																	
93			Swordfish	ISC																																	
94	Taiwan	Longline	Albacore	ISC																																★	★
95				WCPFC																																	
96			Pacific bluefin tuna	ISC																															★	★	★
97				WCPFC																																	
98			Striped marlin	ISC																															★	★	★
99				WCPFC																																	
100			Swordfish	ISC																															★	★	
101				WCPFC																																	
102	Taiwan	Not specified	Striped marlin	ISC																															★	★	
103			Swordfish	ISC																															★	★	
104	Taiwan	Other gears	Albacore	WCPFC																																	
105			Pacific bluefin tuna	ISC																																	
106				WCPFC																																	
107			Striped marlin	WCPFC																																	

Line No.	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total N. of year	Line No.							
72																				★						★				★	★	★											9	72							
73				●		●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	37	73					
74				●		●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	37	74				
75								★								★	★														★	★	★												7	75					
76																																								★					1	76					
77				★		★	★	★	★	★	★	★	★	★		★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	37	77				
78	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	51	78			
79																																									★	★	★		3	79					
80																																								★	★	★		3	80						
81																				★	★	★	★	★																						6	81				
82																				●	●	●	●	●																							5	82			
83															★	★	★	★	★	★	★	★	★	★																								10	83		
84																				●	●	●	●	●																								5	84		
85																				●	●	●	●	●																								5	85		
86																																						★	★	★	★	★					5	86			
87																																						★	★	★	★	★					5	87			
88																																						★	★	★	★	★	★				6	88			
89																																						★	★	★	★	★	★				6	89			
90																																						★	★	★	★	★	★				6	90			
91																																						★	★	★	★	★	★				6	91			
92																																						★	★	★	★	★	★				6	92			
93																																						★	★	★	★	★	★				6	93			
94	★	★	★	★		★	★	★	★	★	★	★	★	★	★						★	★	★		★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	33	94			
95	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	57	95		
96	★		★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	40	96		
97	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	57	97	
98	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	42	98	
99	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	57	99	
100	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	42	100	
101	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	57	101	
102	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	42	102
103	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	42	103
104		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	28	104	
105				★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	31	105	
106		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	28	106	
107	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	28	107	

Line No.	Country	Gear	Species	Holdings	Year																																		
					1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968		
108			Swordfish	WCPFC																																			
109	Taiwan	Purse seine	Albacore	ISC																																			
110			Pacific bluefin tuna	ISC																																			
111			Striped marlin	ISC																																			
112			Swordfish	ISC																																			
113	Taiwan	<i>Small-scale longline (STLL)</i>	Albacore	ISC																																			
114			Pacific bluefin tuna	ISC																																			
115			Striped marlin	ISC																																			
116			Swordfish	ISC																																			
117	USA	Gillnet	Albacore	ISC																																			
118				WCPFC																																			
119			Pacific bluefin tuna	ISC																																			
120			Striped marlin	ISC																																			
121				WCPFC																																			
122			Swordfish	ISC																																			
123				WCPFC																																			
124	USA	Handline	Albacore	ISC																																			
124			Striped marlin	ISC																																			
124			Swordfish	ISC																																			
125	USA	Harpoon	Albacore	ISC																																			
126			Pacific bluefin tuna	ISC																																			
127			Striped marlin	ISC																																			
128			Swordfish	ISC																																			
129	USA	Hook-and-line	Albacore	ISC																																			
130			Pacific bluefin tuna	ISC																																			
131			Striped marlin	ISC																																			
132			Swordfish	ISC																																			
133	USA	Longline	Albacore	ISC																																			
134				WCPFC																																			
135			Pacific bluefin tuna	ISC																																			
136			Striped marlin	ISC																																			
137				WCPFC																																			
138			Swordfish	ISC																																			
139				WCPFC																																			
140	USA	Other gears	Albacore	ISC																																			
141				WCPFC																																			

Line No.	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total N. of year	Line No.													
108	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●															28	108												
109																																						★	★	★	★	★			5	109											
110															★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★			15	110									
111																																						★	★	★	★	★			5	111											
112																																						★	★	★	★	★			5	112											
113																																						★	★	★	★	★	★	★			6	113									
114																																							★	★	★	★	★	★	★			6	114								
115																																							★	★	★	★	★	★	★			6	115								
116																																							★	★	★	★	★	★	★			6	116								
117																	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★			26	117							
118																	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			24	118						
119													★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★			29	119					
120																																												★	★			2	120								
121																	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			24	121				
122												★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★			30	122			
123																	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			24	123				
124																																													★	★			2	124							
124																		★							★	★			★	★																				6	124						
124																																														★		1	124								
125																																													★	★			2	125							
126																																												★	★			2	126								
127																																													★	★			2	127							
128	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★			41	128				
129																	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★			25	129		
130																																														★	★			2	130						
131																	★	★																												★	★	★	★			5	131				
132																	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★			22	132			
133	★	★	★	★	★	★	★	★	★	★			★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★			61	133		
134	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			61	134		
135																	★							★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★			18	135		
136																		★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★			24	136	
137	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			61	137	
138		★	★					★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★			36	138
139	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			61	139
140							★	★		★											★	★	★	★	★		★	★																			★	★	★	★			21	140			
141	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			58	141	

Line No.	Country	Gear	Species	Holdings	Year																															
					1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
142			Pacific bluefin tuna	ISC																													★			
143			Striped marlin	ISC																																
144				WCPFC														●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
145			Swordfish	ISC																																
146				WCPFC														●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
147	USA	Pole-and-line	Albacore	ISC																							★	★	★	★	★	★	★	★	★	
148				WCPFC																							●	●	●	●	●	●	●	●	●	
149			Pacific bluefin tuna	ISC																					★	★	★	★	★	★	★	★	★	★	★	
150				WCPFC																																
151			Striped marlin	ISC																																
152				WCPFC																							●	●	●	●	●	●	●	●	●	●
153			Swordfish	ISC																																
154				WCPFC																							●	●	●	●	●	●	●	●	●	●
155	USA	Purse seine	Albacore	ISC																																
156				WCPFC																																
157			Pacific bluefin tuna	ISC															★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	
158			Striped marlin	ISC																																
159				WCPFC																																
160			Swordfish	ISC																																
161				WCPFC																																
162	USA	Sport	Albacore	ISC															★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	
163			Pacific bluefin tuna	ISC															★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★
164			Striped marlin	ISC															★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★
165	USA	Troll	Albacore	ISC	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★
166				WCPFC														●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
167			Pacific bluefin tuna	ISC																																★
168			Striped marlin	ISC																																
169				WCPFC															●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
170			Swordfish	ISC																																
171				WCPFC															●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Table1-2 Data Holdings status of WCPFC and ISC (CategoryII; Catch and Effort)
 Holding status ★;ISC, ●;WCPFC, ORANGE CELL; Irregular code for ISC database

Line No.	Country	Gear	Resolution	Species	Holdings	Year																						
						1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
1	Canada	Troll	1x1	Albacore	ISC																							
2	China	Longline	5x5	Albacore	ISC																							
2					WCPFC																							
3				Striped marlin	ISC																							
3					WCPFC																							
4				Pacific bluefin tuna	WCPFC																							
5				Swordfish	ISC																							
5					WCPFC																							
6	Japan	Longline	5x5	Albacore	ISC			★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★
7					WCPFC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
8				Pacific bluefin tuna	ISC			★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★
9					WCPFC			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
10				Striped marlin	ISC			★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★
11					WCPFC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
12				Swordfish	ISC			★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★
13					WCPFC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
14	Japan	Pole-and-line	1x1	Albacore	ISC																					★	★	★
15					WCPFC																					●	●	●
16				Pacific bluefin tuna	ISC																					★	★	★
17	Japan	Purse seine	1x1	Albacore	ISC																					★	★	★
18				Pacific bluefin tuna	ISC																					★	★	★
19	Korea	Longline	5x5	Albacore	WCPFC																							●
20				Pacific bluefin tuna	WCPFC																							●
21				Striped marlin	WCPFC																							●
22				Swordfish	ISC																							●
23					WCPFC																							●
24			NA	Albacore	ISC																						★	★
25				Pacific bluefin tuna	ISC																						★	★
26				Striped marlin	ISC																						★	★
27				Swordfish	ISC																						★	★
28	Korea	Purse seine	NA	Pacific bluefin tuna	ISC																						★	★
29	Mexico	Longline	10x10	Swordfish	ISC																							
30	Mexico	Purse seine	10x10	Albacore	ISC																							
31				Pacific bluefin tuna	ISC																							
32	Mexico	Sport	20x20	Striped marlin	ISC																							
33	Taiwan	Longline	5x5	Albacore	WCPFC						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
34				Pacific bluefin tuna (BFT)	WCPFC														●									●
35				Striped marlin	WCPFC						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
36				Swordfish	WCPFC						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
37	Taiwan	Large-scale longline (LTLL)	5x5	Albacore	ISC																							
38				Pacific bluefin tuna (BFT)	ISC																							
39				Striped marlin	ISC																							
40				Swordfish	ISC																							
41	Taiwan	Small-scale longline (STLL)	5x5	Albacore	ISC																							
42				Striped marlin	ISC																							
43				Swordfish	ISC																							
44				Pacific bluefin tuna (BFT)	ISC																							
45	USA	Gillnet	1x1	Albacore	ISC																							

Line No.	Country	Gear	Resolution	Species	Holdings	Year																							
						1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
46				Pacific bluefin tuna	ISC																								
47				Striped marlin	ISC																								
48				Swordfish	ISC																								
49	USA	Harpoon	1x1	Albacore	ISC																								
50				Pacific bluefin tuna	ISC																								
51				Striped marlin	ISC																								
52				Swordfish	ISC																						*	*	*
53	USA	Longline	5x5	Albacore	ISC																								
54					WCPFC																								
55				Pacific bluefin tuna	ISC																								
56					WCPFC																								
57				Striped marlin	ISC																								
58					WCPFC																								
59				Swordfish	ISC																								
60					WCPFC																								
61	USA	Pole-and-line	1x1	Albacore	ISC							*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
62				Pacific bluefin tuna	ISC																								
63				Striped marlin	ISC																								
64				Swordfish	ISC																								
65	USA	Sport	1x1	Albacore	ISC																								
66				Pacific bluefin tuna	ISC																								
67				Striped marlin	ISC																								
68				Swordfish	ISC																								
69	USA	Troll	1x1	Albacore	ISC							*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
70					WCPFC																								
71				Pacific bluefin tuna	ISC																								
72				Striped marlin	ISC																								
73				Swordfish	ISC																								
74	USA(Guam)	Longline	5x5	Albacore	WCPFC																								
75				Striped marlin	WCPFC																								
76				Swordfish	WCPFC																								

Line No.	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total N. of year	Line No.		
46				★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	29	46		
47				★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	29	47	
48				★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	29	48	
49																																	★			1	49		
50																																			★		1	50	
51																																		★		1	51		
52	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	35	52	
53														★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	20	53	
54															●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	20	54	
55														★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	20	55	
56																		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	16	56	
57														★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	20	57	
58															●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	20	58	
59														★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	20	59	
60															●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	20	60	
61	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	42	61
62																																		★	★		2	62	
63																																		★	★		2	63	
64																																		★	★		2	64	
65																																		★	★		2	65	
66																																		★	★		2	66	
67																																		★	★		2	67	
68																																		★	★		2	68	
69	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	50	69	
70																																				●	1	70	
71																																		★	★		2	71	
72																																		★	★		2	72	
73																																		★	★		2	73	
74																			●	●																	3	74	
75																			●	●																	1	75	
76																●			●	●																	5	76	

1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total N. of year	Line No.	
★	★							★					★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	19	1	
															●			●	●									3	2	
																	●		●									2	3	
																		●	●						●			3	4	
										●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	17	5	
										●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	15	6	
									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	18	7	
																			●				●				2	8		
				★	★	★	★	★									★					★	★		★	★	★	11	9	
							★	★									★						★	★		★	★	9	10	
							★	★	★													★					★	5	11	
							★	★	★														★	★		★	★	9	12	
																						★					★	5	13	
															●	●		●	●									4	14	
															●	●	●	●	●	●	●							5	15	
															●	●	●	●	●	●	●							7	16	
★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	46	17
★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	47	18
★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	41	19
★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	41	20
											●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			13	21	
											●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	13	22	
											●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	16	23	
★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	46	24
★	★	★			★	★				★							★											23	25	
																					★							1	26	
★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★		★							27	27	
																				●	●	●			●	●	5	28		
																								●		●	4	29		
★	★	★	★				★	★	★	★	★	★	★	★	★	★						★	★	★				21	30	
																					★							6	31	
																								●	●	●	7	32		
										●	●													●	●			7	33	
										●	●													●	●			7	34	
																		★	★	★	★	★	★	★	★	★	★	10	35	
																		★	★	★	★	★	★	★	★	★	★	10	36	
																		★	★	★	★	★	★	★	★	★	★	10	37	
										●								●	●	●	●	●	●			●	7	38		

1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total N. of year	Line No.	
																	●					●	●	●	●	●	●	7	39	
																	★	★	★	★	★	★	★	★				7	40	
																										★		1	41	
																									★	★	★	3	42	
																									★	★	★	3	43	
													●	●									●	●	●	●	●	8	44	
																									●			1	45	
											●	●	●	●	●			●					●	●	●	●	●	10	46	
											●	●	●	●	●	●	●	●	●				●	●	●	●	●	13	47	
											●	●	●	●	●	●	●	●	●	●			●	●	●	●	●	17	48	
									●	●	●	●	●	●	●	●	●	●	●	●			●	●	●	●	●	17	49	
									●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	18	50	
																					★	★	★	★	★	★	★	7	51	
																									★	★	★	2	52	
																					★	★	★	★	★	★	★	7	53	
																					★	★	★	★	★	★	★	7	54	
																	●						●	●	●	●		4	55	
													●	●	●	●	●	●	●				●	●	●	●	●	10	56	
																								★	★	★	★	4	57	
																									★	★		2	58	
			★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	24	59
										●	●	●	●	●	●	●	●	●	●	●	●	●	●					11	60	
																								★	★			4	61	
										●	●	●	●	●	●	●	●	●	●	●	●	●						11	61	
																					★	★	★	★	★	★	★	7	62	
										●	●	●	●	●	●	●	●	●	●	●	●	●						11	63	
																								★	★	★	★	4	64	
★	★	★	★	★	★	★	★								★	★	★	★	★	★	★	★	★	★	★	★	★	32	65	
															●													1	66	
																	●						●			●		5	67	
																	●						●	●	●	●		7	68	
★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	50	69
														●														1	70	
												●	●	●	●													4	71	
													●															1	72	
												●	●		●	●												4	73	