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**ANNUAL REPORT TO THE COMMISSION  
PART 1: INFORMATION ON FISHERIES, RESEARCH, AND STATISTICS**

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**WCPFC-SC6-AR/CCM-02**

**CANADA**

**2010 Annual Report to the  
Western and Central Pacific Fisheries Commission**

**Canada**

**PART I. INFORMATION ON FISHERIES, RESEARCH, AND STATISTICS  
For 2009**

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Scientific data was provided to the Commission in accordance with the decision relating to the provision of scientific data to the Commission by 30 April 2010	YES
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## Summary

Catch, effort and catch per unit of effort (CPUE) data for the Canadian albacore (*Thunnus alalunga*) fishery in the WCPFC Convention Area for 2009 are summarized in this document. The Canadian tuna fishery is a troll fishery that uses jigs and targets albacore exclusively. The Canadian fishery was inactive within the WCPFC convention area in 2009, with no effort or catch reported in statistical zones within the convention area in either the North or South Pacific Oceans. The total Pacific albacore tuna catch from 2002–2008 by the Canadian albacore troll fishery within the convention area has ranged from 83 mt in 2005 to 453 mt in 2003 and effort has ranged from 56 v-d in 2007 to 408 v-d in 2002. Both catch and effort by the Canadian fleet in the WCPFC convention area have declined since 2002. Canada participated in two ISC-Albacore Working Group workshop meetings in 2009 and implemented an on-board size-sampling program by harvesters.

# 2010 Annual Report to the Western and Central Pacific Fisheries Commission

## Canada

### **PART I. INFORMATION ON FISHERIES, RESEARCH, AND STATISTICS (For 2009)**

Canadian fishermen have been fishing for albacore tuna (*Thunnus alalunga*) since the mid-1930s. The Canadian fishery started in the coastal waters off British Columbia and is a troll fishery using jigs to target albacore tuna in the surface waters of four areas of the Pacific Ocean in which the fleet operates: (1) British Columbia coastal, (2) British Columbia/United States coastal, (3) high seas north Pacific ocean, and (4) high seas south Pacific ocean. Although the Canadian fleet will follow albacore tuna concentrations into offshore waters, in recent years the majority of effort and catch has occurred in the coastal waters of Canada and the United States and this trend continued in 2009. Access by Canadian vessels to waters in the U.S. Exclusive Economic Zone (EEZ) is governed by a bilateral Canada-United States albacore tuna treaty, which enables Canadian and U.S. fishers to catch north Pacific albacore in each other's EEZ, and land albacore tuna at designated ports in Canada and the United States.

Canada is committed to providing detailed catch and effort statistics, logbook data, and fishing vessel information, as is required under the Highly Migratory Species Convention. Management regulations for Canadian vessels fishing albacore tuna in 2009 are documented in the *Pacific Region Integrated Fisheries Management Plan: Tuna - April 1, 2009 to March 31, 2010*, which is available electronically at: <http://www.dfo-mpo.gc.ca/Library/336239.pdf>. These regulations specify that Canadian fishers must obtain a licence to fish for albacore tuna and that they must maintain accurate records of daily harvest operations in the *Canadian Pacific Albacore Tuna Logbook*. Logbooks are purchased from the Canadian Highly Migratory Species Foundation and fishers are required to submit their logbooks within 7 days of their final landing or mid-November, whichever is first. The Canadian tuna fishery in the coastal and high seas waters of the Pacific Ocean was open from 01 April 1 2009 to 31 March 2010, but all catch and effort occurred between 15 June and 31 October 2009.

This report presents summaries of catch, effort and catch per unit of effort (CPUE) data for the Canadian albacore tuna troll fishery in the WCPFC Convention Area in 2009.

#### **1.1 Annual Fisheries Information**

Data on albacore tuna catch and effort are compiled from hailing records, logbooks, and sales slips from processing plants and stored in the *Canadian Albacore Tuna Catch and Effort Relational Database* (Stocker et al. 2007). This database contains all fishery-related scientific data from 1995 to the present and provides the best estimate of total annual catch and effort by vessel and geographic area. All fishing vessels are required to hail out when they intend to start fishing and hail in when fishing ceases. Hail data from vessels fishing in Canadian waters are

obtained from Marine Communications and Traffic Services, Canadian Coast Guard, and hail data for vessels fishing in U.S. waters are obtained from Ship.com. The hail data are used to estimate total vessels fishing (Stocker et al. 2007). Canadian vessels must also carry logbooks while fishing for highly migratory species in any waters of the Pacific Ocean. Daily catch and effort data at the highest temporal and spatial scales are obtained from completed copies of the logbooks submitted at the end of the fishing season. A full description of the type of information recorded in the logbooks is provided by Stocker et al. (2007). Sales slips records of landings provide the most accurate estimates of albacore landings (weight), although they underestimate total annual landings because they do not fully account for international sales, domestic public sales or take-home totals (Stocker et al. 2007). Logbooks, sales slips and at-sea trans-shipment slips, completed at the time fish are landed and sold, must be returned to Fisheries and Oceans Canada (DFO) for entry into the albacore catch database (Argue et al. 1999; Stocker et al. 2007). Canada does not currently have a domestic program to collect biological data (lengths, weights, sex) from catch landed in Canadian ports.

The data in this report were obtained from Version 10.03.07 of the *Canadian Albacore Tuna Catch and Effort Relational Database* using codebase Version 09.12.30 to query and compile the data. The 2009 data presented in this report are considered preliminary while the data from 2002 to 2008 are definitive. Similar summaries of data from 2002 to 2008 are provided by Stocker and Shaw (2003, 2004, 2005), Stocker (2006, 2007), and Holmes (2008, 2009).

#### **1.1.1 Annual Catch in the WCPFC Convention Area**

Canadian catch of north Pacific albacore tuna within the WCPFC convention area ranged between 11 and 1,007 t, averaging 431 t between 1995 and 2005 and south Pacific albacore catch has varied between 0 and 313 t, averaging 135 t, from 1996 to 2007 (Figure 1; Table 1). Canadian vessels ceased entering the WCPFC convention area in the north Pacific Ocean after the 2005 fishing season and became inactive in the south Pacific Ocean following the 2007 fishing season. All catches of albacore tuna in the North Pacific reported by the Canadian troll fleet in 2008 and 2009 (Table 1) occurred within the convention area of the Inter-American Tropical Tuna Commission (IATTC) east of 150 °W longitude.

#### **1.1.2 Annual Effort in the WCPFC Convention Area**

The number of Canadian vessels operating in the convention area has declined from a peak of 35 in 1997 to zero vessels in 2008 and 2009 (Table 1) and similarly, fishing effort (measured as the number of vessel fishing days (v-d)) has declined from 1,188 v-d in 1997 to 59 v-d in 2007 and 0 thereafter. The majority of catch and effort in the convention area occurred in the north Pacific west of 150 °W longitude.

#### **1.1.3 Annual CPUE in the WCPFC Convention Area**

Nominal (reported) catch-per-unit-effort (CPUE) for north Pacific albacore has ranged from a low of 193 kg/v-d in 2005 to a high of 1,653 kg/v-d in 1996 and for south Pacific albacore it has ranged from 488 kg/v-d in 1996 to 1,504 kg/v-d in 1998. Average annual CPUEs are 1,057 kg/v-d for north Pacific albacore and 893 kg/v-d for south Pacific albacore (Table 1).

#### **1.1.4 Interactions with other Species in the WCPFC Convention Area**

There were no reported interactions or bycatch of sharks, seabirds, or sea turtles by the Canadian fishery in the WCPFC convention area in 2009.

#### **1.1.5 Swordfish**

Canadian-flagged vessels or Canadian vessels under charter, lease or similar arrangements operating as part of the domestic Canadian fishery did not fish for or catch swordfish (*Xiphias gladius*) south of 20 °S for the 2000-2009 period.

#### **1.1.6 Transshipment**

Transshipment activities within the WCPFC convention area were not reported by Canadian vessels in 2009.

### **1.2 Research and Statistics**

#### **1.2.1 Stock assessment studies**

Canada currently chairs the ISC Albacore Working Group (ISC-ALBWG) and participated in two workshops in 2009. Results of these workshops, including scientific advice, are contained in Annexes 6 and 9 of the “Report of the Ninth Meeting of the International Committee for Tuna and Tuna-like Species in the North Pacific Ocean”, which is available electronically at: [http://isc.ac.affrc.go.jp/pdf/ISC9pdf/ISC9\\_Plenary\\_Final.pdf](http://isc.ac.affrc.go.jp/pdf/ISC9pdf/ISC9_Plenary_Final.pdf).

#### **1.2.2 Size Sampling of the Catch**

Canada implemented an on-board sampling program in 2009. Harvesters were asked to measure and record the lengths (rounding down to the lowest whole number) of the first 10 fish landed on a daily basis, or as often as possible. Thirty-eight vessels participated and turned in 11,717 fork length measurements of north Pacific albacore, for a sampling rate of 1.46% of the fish caught.

#### **1.2.3 Age Assessment with Hard Body Parts**

A contractor removed the otoliths from the heads of 49 albacore collected in August and September 2009 by the American Fishermens Research Foundation and forwarded the otoliths and dorsal fin rays to the Sclerochronology Lab in Nanaimo, Canada, for age assessment. These structures represent a pilot project to determine appropriate techniques and assess the utility of these structures for aging albacore. Since only one otolith per pair is required, the remaining otoliths will be forwarded to colleagues at the Southwest Fishery Science in La Jolla, CA, and a comparison with the Nanaimo lab will be attempted at a future date.

#### **1.2.4 Standardizing Canadian CPUE**

Nominal Canadian CPUE for north Pacific albacore has risen consistently since 1995. This increase is believed to be related to the retirement of inexperienced/undercapitalized vessels, the increasing experience of harvestors remaining within the fishery, and the adoption of satellite technology that provides better targeting of areas to fish based on SST and ocean colour. A small project was initiated to standardize the Canadian CPUE time series using generalized linear Bayesian models to remove this effect on CPUE were promising, but further work, based on feedback from the ALBWG, is ongoing at present.

## References

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- Stocker, M., Stiff, H., Shaw, W., and Argue, A.W. 2007. The Canadian albacore tuna catch and effort relational database. Canadian Technical Report of Fisheries and Aquatic Sciences 2701: vi+76 p. <http://www.dfo-mpo.gc.ca/Library/327827.pdf>

Table 1. Fisheries statistics for the Canadian troll fleet targeting albacore in the WCPFC convention area, 1995 to 2009. A blank space indicates no records are available. CPUE values are not standardized.

Year	North Pacific <sup>A</sup>				North Pacific – inside WCPFC CA <sup>B,C</sup>				South Pacific <sup>C</sup>			
	Catch (t)	Effort (v-d)	Num. of Vessels	CPUE (kg/v-d)	Catch (t)	Effort (v-d)	Num. of Vessels	CPUE (kg/v-d)	Catch (t)	Effort (v-d)	Num. of Vessels	CPUE (kg/v-d)
1995	1,763	5,930	284	297	23	17	3	1,353				
1996	3,316	8,151	292	407	811	523	25	1,551	82	168	3	488
1997	2,168	4,324	197	501	1,007	1,017	32	990	149	171	3	871
1998	4,177	6,018	214	694	752	455	27	1,653	167	111	3	1,504
1999	2,734	6,969	233	392	151	327	14	462	254	197	5	1,289
2000	4,531	8,769	238	517	586	608	12	964	313	348	5	899
2001	5,248	10,021	244	524	569	383	7	1,486	208	168	4	1,238
2002	5,379	8,323	228	646	259	250	7	1,036	144	158	4	911
2003	6,861	8,429	192	814	453	389	15	1,165	0	4	1	0
2004	7,856	9,943	220	790	123	159	5	774	63	67	1	940
2005	4,845	8,565	213	566	11	57	1	193	72	111	2	649
2006	5,832	6,243	174	934					135	105	2	1,286
2007	6,075	7,113	198	854					38	59	1	644
2008	5,478	5,881	134	931					0	0	0	
2009 <sup>D</sup>	5,685	6,631	135	857					0	0	0	

A – Total catch and effort in the north Pacific, including catch and effort within the WCPFC convention area

B – North Pacific albacore catch and effort west of 150 °W longitude (inside the WCPFC convention area).

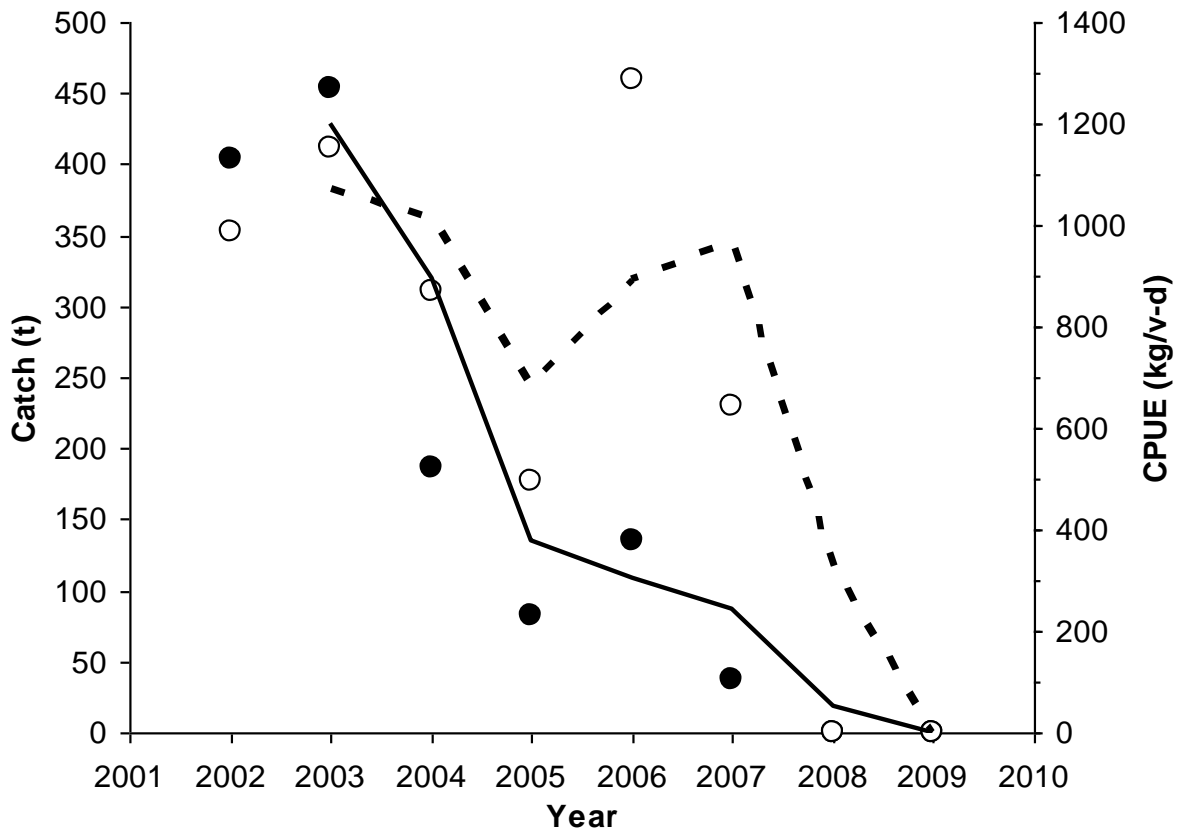
C – Total catch and effort in the WCPFC convention area are the sum of figures in these columns

D – Preliminary estimates from database version 10.03.07.

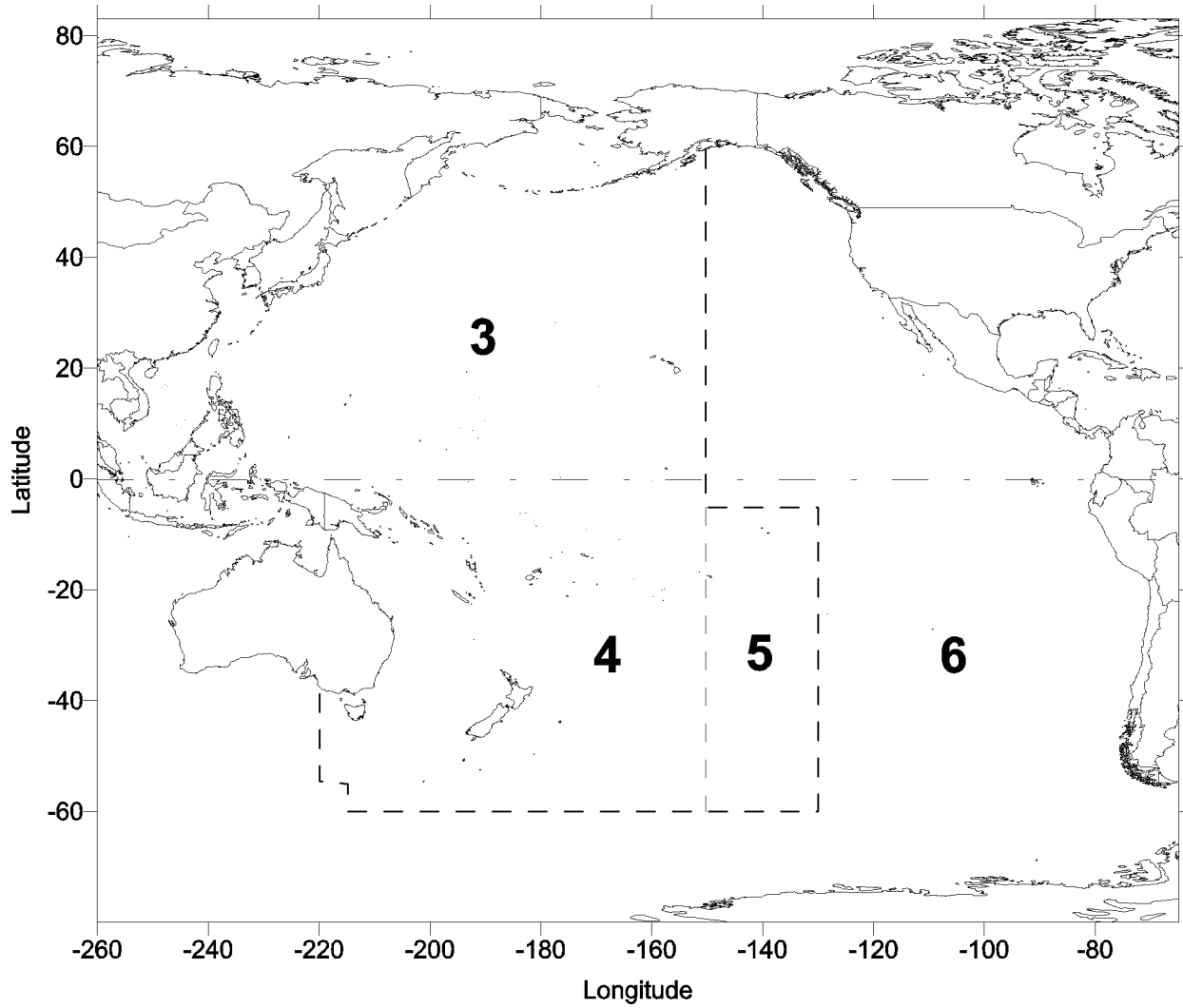


**Table 2.** Aggregated Canadian albacore tuna catch and effort data in the Pacific Ocean for 2009.

Area	Catch (t)	Effort (vessel-days)
1. North Pacific Ocean	5,685	6,631
2. South Pacific Ocean	0	0
3. WCPFC Statistical Area N	0	0
4. WCPFC Statistical Area S	0	0
5. WCPFC Statistical Area E of 150°W	0	0
6. IATTC E of 130°W	0	0



**Figure 1.** Canadian south Pacific albacore tuna catch (●) and catch-per-unit-effort (kg/v-d), CPUE (○), in the WCPFC convention area, 2002-2009. Lines are two-year running averages of catch (solid) and CPUE (dashed).



**Figure 2.** Statistical areas used for reporting of albacore tuna aggregated catch and effort data in the WCPFC convention area. Numbers refer to area catches and efforts shown in Table 2.