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

WCPFC-SC8-AR/CCM-02

CANADA

**2012 Annual Report to the
Western and Central Pacific Fisheries Commission**

Canada

**PART I. INFORMATION ON FISHERIES, RESEARCH, AND STATISTICS
For 2011**

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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 2012	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 2011 are summarized in this document. The Canadian tuna fishery is a troll fishery that uses jigs and targets albacore exclusively. Minimal catch (1 t) and effort (3 vessel-days) were recorded in the WCPFC convention area north of the equator in 2011. Canadian flagged vessels did not operate in the south Pacific Ocean in 2011. Annual albacore tuna catch and effort by the Canadian troll fishery in the north Pacific within the WCPFC convention area have ranged from 0 to 1,007 t and 0 to 1,017 vessel-days respectively, between 1995 and 2011. Catch and effort in the south Pacific Ocean by the Canadian albacore troll fleet have ranged between 0 and 313 t and 0 and 348 vessel-days, respectively, from 1995 to the present. Both catch and effort by the Canadian fleet in the WCPFC convention area have declined since 2002. Canada chairs the ISC-Albacore Working Group and participated in three meetings for the 2011 assessment of north Pacific albacore.

2011 Annual Report to the Western and Central Pacific Fisheries Commission

Canada

PART I. INFORMATION ON FISHERIES, RESEARCH, AND STATISTICS (For 2011)

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 in the surface waters of the 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 2011. 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.

Management regulations for Canadian vessels fishing albacore tuna are documented in the Pacific Region Integrated Fisheries Management Plans (IFMP). These plans correspond to the fiscal year used by the Canadian government and cover the period 01 April to 31 March of the following calendar year. For example, the 2011 IFMP covers the period from 01 April 2011 to 31 March 2012 and is available at <http://www.dfo-mpo.gc.ca/Library/343252.pdf>. The Canadian albacore troll fishery is open from 01 April to 31 March, but the majority of catch and effort in the north Pacific Ocean occurs in a four month period from the beginning of June to the end of October and in the south Pacific Ocean between January and March. Canadian vessels are licensed to fish within the Canadian exclusive economic zone (EEZ), the EEZ of the United States, and the highseas (waters outside the EEZs) in both the north and south Pacific Oceans. Access to the United States Exclusive Economic Zone (EEZ) is permitted through a bilateral Treaty, which provides for reciprocal access by Canadian-flagged and US-flagged vessels licensed to fish for albacore and for the landing of albacore catches at designated ports within each country.

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 from 1995 to 2011.

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 are obtained from a third party service

provided and are used to estimate the number of vessels fishing and the approximate area of these activities (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 (see Stocker et al. 2007). Sales slips provide records of landings and are the most accurate estimates of albacore catch weight because these data represent the weights upon which payment is made. Sales slips may underestimate total annual catch 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 (Stocker et al. 2007). Canada implemented a catch sampling program in 2009 to obtain length-frequency data from the catch harvested by the troll fishery. The Canadian albacore troll fishery does not discard albacore.

The data in this report were obtained from Version 12.04.23 of the *Canadian Albacore Tuna Catch and Effort Relational Database* using codebase Version 12.04.23 to query and compile the data. The 2011 data presented in this report are preliminary while the data from 1995 through 2010 have undergone some revisions (described below) and are considered 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, 2010, 2011).

1.1.1 Annual Catch in the WCPFC Convention Area

The preliminary Canadian catch in 2011 was 5,393 t (Table 1) of albacore in the north Pacific Ocean (Table 2). Approximately 1 t of this total was harvested in the WCPFC convention area. No catch or effort was reported from the south Pacific Ocean in 2011. Canadian catches of north Pacific albacore within the WCPFC convention area have ranged between 11 and 1,007 t historically, averaging 431 t for the 1995-2005 period and south Pacific albacore catch has varied between 0 and 313 t, averaging 135 t, from 1996 to 2007 (Figure 1; Table 1).

1.1.2 Annual Effort in the WCPFC Convention Area

The number of Canadian vessels operating in the convention area in the north Pacific has declined from a peak of 32 in 1997 to zero (0) vessels after the 2005 fishing season and similarly, fishing effort (measured as the number of vessel fishing days (v-d)) has declined from 1,017 v-d in 1997 to 57 v-d in 2005 and 0 thereafter (Table 1).

Annual effort in the south Pacific was consistently lower than in the north Pacific, ranging from 1 to 5 vessels and 4 to 348 vessel-days (Table 1) from 1996 to 2007. Canadian vessels ceased operating in the south Pacific following the 2007 fishing season..

1.1.3 Revisions to Catch and Effort Data

The catch and effort (both vessel-days and number of vessels) data for 1995 through 2010 shown in Table 1 have been revised relative to previous reported data for these years (compare to Table 1 in Holmes 2011). These revisions affect data from the north Pacific only; south Pacific data remain unchanged. Between 1995 and 2004 the changes are relatively minor, amounting to 1 to 5 t increase or decrease in catches, 1 to 13 vessel-day change in effort and increases or decreases in vessel numbers of 1 to 5 vessels. Since 2005, changes in catch and effort (measured as vessel-

days) have been more substantial ranging from 43 to 592 t increases in catch and 13 increase to 152 day decrease in effort.

There are two primary reasons for these revisions: (1) late logbook submissions, and (2) late reconciliation of sales slip weights to trip weights estimated in logbooks. Logbooks must be returned after the fishing season has ended and typically no later than the middle of November of the calendar year for which it was issued. Since licenses are area specific and vessels are required to hail into and out of a specific fishing area, *a priori* knowledge of the fleet size and composition by fishing area is high. Average catch and effort for the area in which a vessel is licensed to operate are substituted for logbook data in the calculations of aggregated catch and effort if a logbook is not submitted after fishing ends. If a logbook is submitted later (months or even years), then the average values are replaced with the data reported in the logbook and aggregated catch and effort are recalculated. The majority of late logbook submissions are from vessels fishing within the Canadian EEZ because the captains of these vessels are less experienced than other participants in the fishery, taking part occasionally when albacore availability in Canadian waters is perceived to be relatively high. Late logbook submissions account for the minor changes in catch and effort data.

The larger changes in catch from 2005 to 2010 are the result of late reconciliation of logbook estimates of total trip weight with the more accurate data on sales slips, which are considered the most accurate source of weight data since the weights on these slips form the basis for payment between fishermen and buyers. Sales slips are forwarded by fish buyers to Fisheries and Oceans Canada and entered into a specialized database that contains sales slip data for all domestic Pacific fisheries. Once in the sales slip database, the weight figures are forwarded to the tuna data manager for reconciliation against logbook data using the sales slip number, which is recorded in the logbook for each trip. In order to enter sales slip data into the sales slip database, a domestic management area designation is required as this is a key field in the database. These domestic management areas do not apply to the majority of Canadian albacore catch and effort, which occur in the United States EEZ and high seas waters beyond domestic boundaries. As a result there can be lengthy delays in reconciling our best catch weight data with data estimated by harvesters in their logbooks.

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 2011.

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 2000-2011 period.

1.1.6 Transshipment

Transshipment activities within the WCPFC convention area were not reported by Canadian vessels in 2011.

1.2 Research and Statistics

1.2.1 Stock assessment

Canada currently chairs the ISC Albacore Working Group (ISC-ALBWG) and participated in one workshop meeting in 2011 to complete a new stock assessment. Results of this assessment along with recommendations on stock status and conservation advice were transmitted to the Science Committee at its Seventh Regular Session in August 2011 and the Seventh Regular Session of the Northern Committee in September 2011. The stock assessment document is available at: http://isc.ac.affrc.go.jp/pdf/ISC11pdf/Annex_9_ISC11_ALBWG_Stock_Assessment_Workshop_Report_FINAL_complete.pdf.

1.2.2 Size Sampling of the Catch

Canada implemented an on-board sampling program in 2009. Harvesters voluntarily measure and record the fork lengths (rounding down to the lowest whole number) of the first 10 fish landed on a daily basis, or as often as possible. Forty-three (43) vessels participated in 2011 and turned in 11,373 fork length measurements of juvenile north Pacific albacore, for a sampling rate of 1.73% of the total reported catch (N = .831,299). No measurements were made on fish captured in the WCPFC convention area.

1.3 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 2011. 0 means no reported data. Data for 1995-2010 are revised relative to previous reports.

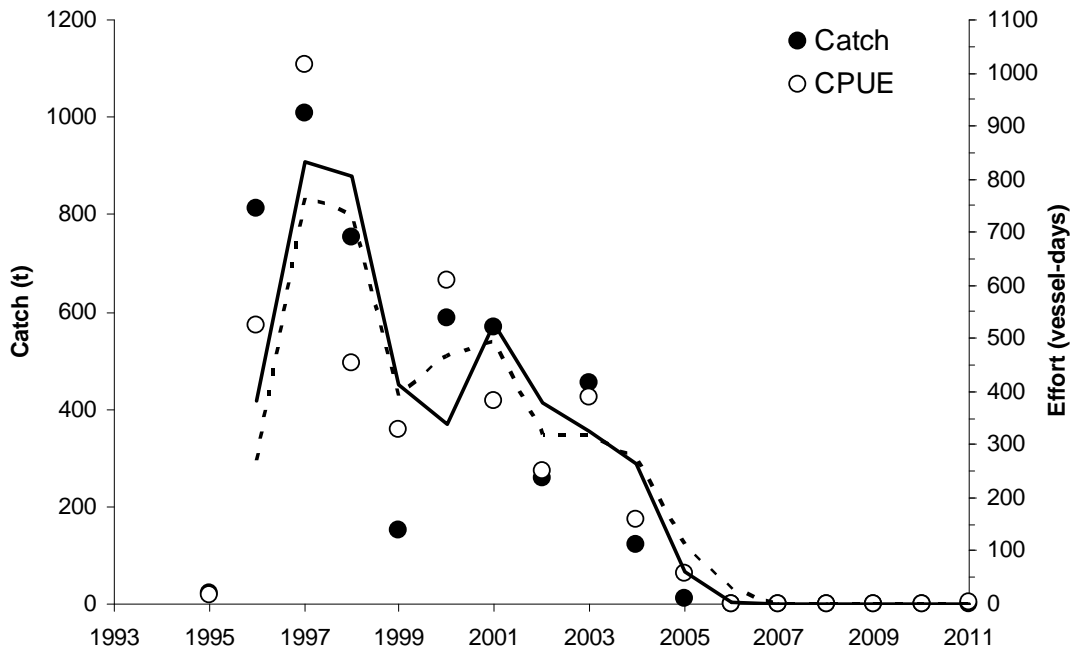
Year	North Pacific ^A			North Pacific – inside WCPFC CA ^{B,C}			South Pacific ^C		
	Catch (t)	Effort (v-d)	Num. of Vessels	Catch (t)	Effort (v-d)	Num. of Vessels	Catch (t)	Effort (v-d)	Num. of Vessels
1995	1,761	5,923	287	23	17	3			
1996	3,321	8,164	295	811	523	25	82	168	3
1997	2,166	4,320	200	1,007	1,017	32	149	171	3
1998	4,177	6,018	214	752	455	27	167	111	3
1999	2,734	6,970	238	151	327	14	254	197	5
2000	4,531	8,769	243	586	608	12	313	348	5
2001	5,248	10,021	248	569	383	7	208	168	4
2002	5,379	8,323	232	259	250	7	144	158	4
2003	6,861	8,429	193	453	389	15	0	4	1
2004	7,857	9,942	221	123	159	5	63	67	1
2005	4,888	8,578	213	11	57	1	72	111	2
2006	6,008	6,277	174	0	0	0	135	105	2
2007	6,667	6,961	207	0	0	0	38	59	1
2008	5,476	5,919	134	0	0	0	0	0	0
2009	5,690	6,553	138	0	0	0	0	0	0
2010	6,552	7,592	159	0	0	0	0	0	0
2011 ¹	5,393	8,568	177	1	3	2	0	0	0

¹ Provisional data from Canadian database version 12.04.23.

Table 2. Aggregated Canadian albacore tuna catch and effort data in the Pacific Ocean for 2011. WCPFC statistical areas are defined in Figure 2.

Area	Catch (t)	Effort (vessel-days)
1. North Pacific Ocean	5,393	8,568
2. South Pacific Ocean	0	0
3. WCPFC Statistical Area N	1	3
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

A.



B.

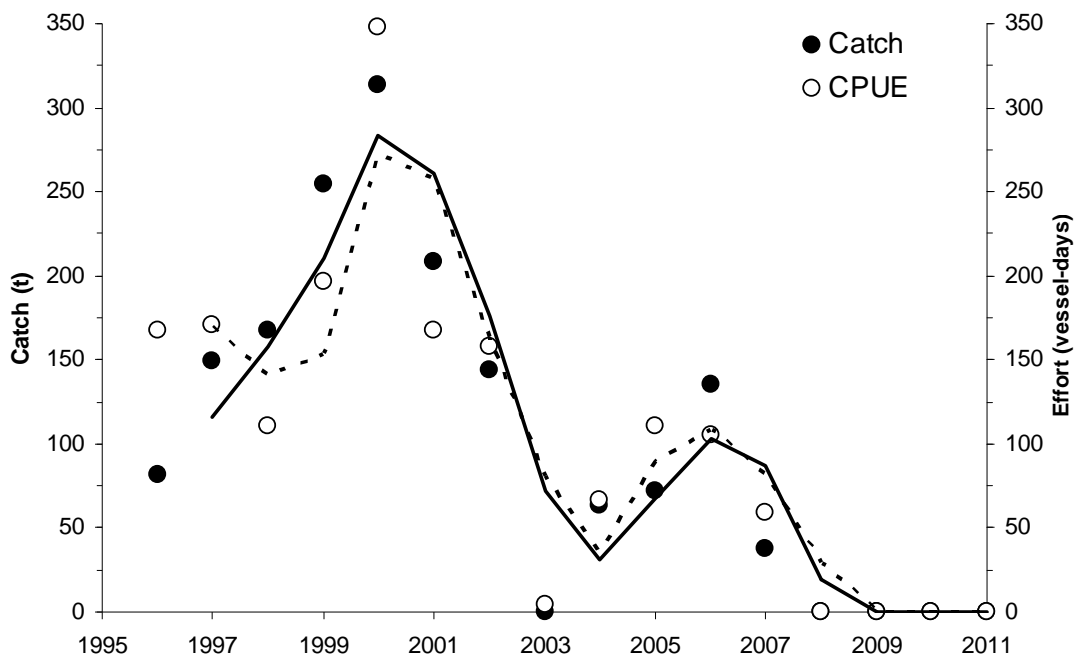


Figure 1. Canadian albacore tuna catch (●) and fishing effort, vessel-days (○), in the WCPFC convention area north of the equator (A) and south of the equator (B). Note the differences in vertical scales. Lines are two-year running averages of catch (solid) and effort (dashed).

