



*6th Meeting of the ISC
23-27 March, 2006
La Jolla, California, U.S.A.*

ISC/06/PLENARY/04

The 2005 Canadian North Pacific Albacore Troll Fishery¹

Max Stocker

**Fisheries and Oceans Canada
Science Branch
Pacific Biological Station
3190 Hammond Bay Road
Nanaimo, B.C., Canada V9T 6N7**

March 2006

¹Working document prepared for the **Sixth Meeting of the International Scientific Committee on Tuna and Tuna-like Species in the North Pacific Ocean (ISC), March 23-27, 2006, La Jolla, California, U.S.A.** Document should not be cited without permission of the authors.

INTRODUCTION

The Canadian fishery for albacore tuna (*Thunnus alalunga*) in the North Pacific is a troll fishery using tuna jigs. Canadian fishermen have been fishing albacore since the mid-1930s. The fishery targets albacore over an expanded range broadly classified into four fishing areas: (1) BC coastal, (2) BC/US coastal, (3) highseas North Pacific Ocean, and (4) highseas South Pacific Ocean. The coastal fleets contain the majority of the vessels, but in recent years, some of the fleet, like U.S.-based troll vessels, follow albacore concentrations into offshore waters.

Canada is committed to providing detailed catch and effort statistics, logbook data, and fishing vessel information, as is required under the new Highly Migratory Species Convention. This report presents summaries of catch, effort and catch per unit of effort (CPUE) data for the Canadian north Pacific albacore tuna fishery in 2005. Shaw (1997, 1999), Shaw and Argue (1999 and 2000), Shaw and Stocker (2002) and Stocker and Shaw (2004a, 2004b and 2005) present similar information for previous years.

DATA SOURCES

FISHERY STATISTICS

All Canadian vessels must carry logbooks while fishing for highly migratory species in any waters. Daily catch and effort data are obtained from completed copies of the *Canadian Albacore Logbook* submitted by fishermen. A full description of the type of information recorded in the logbooks is presented in Shaw and Argue (1999). 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).

Sales slip records are the source of historical northern albacore catches dating back to 1945 (Ware and Yamanaka, 1991). In March 1999, DFO embarked on a program to reconcile past estimates of total Canadian catches of albacore from logbook, sales slip, phone-in and transshipment data. During the process updates, based on new logbook and sales slip information, were made to catches and number of vessels as reported in earlier reports (Shaw and Argue 1999, Argue and Shaw 2000 and Argue et al. 1999). The catch data up to 2004 are considered our best estimates. The data for 2005 are considered to be preliminary.

Catch

The total north Pacific albacore tuna catch from 1995 to 2005 by the Canadian tuna fleet is presented in Table 1. The catches range from 1,720 t in 1995 to 7,842 t in 2004. The preliminary catch estimate for 2005 is 4,963 t a reduction of 36.7% over the high catch of 7,842 t in 2004. The average catch for the period 1995 to 2005 was 4,417 t.

Table 2 shows the distribution of catches by FAO statistical areas from 2001 to 2005. The majority of the catches were from FAO statistical area 67. These catches include

catches made by the Canadian fleet in the US and Canadian EEZ under the bilateral albacore tuna treaty.

Effort

In 2005, 201 Canadian vessels were operating in the north Pacific ocean (Table 1). The fleet size ranged from a low of 193 vessels in 2003 to a high of 292 vessels in 1996. From 1995 to 2005 the average number of Canadian vessels fishing for albacore in the north Pacific ocean was 231. Fishing effort in the tuna fishery is measured in number of vessel fishing days (v-d). Fishing vessel days ranged from 4,637 in 1997 to 9,914 in 2004. The 2005 estimate of 8,530 v-d is higher than the 1995-2005 average of 7,821 v-d (Table 1).

CPUE

The CPUE ranged from a low of 291 kg/v-d in 1995 to a high of 810 kg/v-d in 2003 (Table 1). The average CPUE for the period 1995-2005 was 555 kg/v-d. Both catch and CPUE follow an increasing trend over the period 1995-2004 and then drop in 2005 (Figure 1).

RESEARCH ACTIVITIES

The *Canadian Albacore Tuna Catch and Effort Relational Database Management System* was developed by Fisheries and Oceans Canada to address the issues of tracking albacore catch and effort data from fishing logbooks and sales slips landings from the Canadian troll fleet operating in the Pacific Ocean. A project to document the existing relational database for the Canadian Pacific albacore catch and effort data is underway. A technical report will describe the design of the entire database (including triplog, saleslip and hail components) based on a venn diagram concept, and include the relationship diagram that documents the structure of the relationships between these components. The description includes a *conceptual data model*, which outlines the logical relationship of fields and tables, and a *physical data model*, which describes the hardware/software implementation of the conceptual model, and includes an outline of the data compilation, formulation, and summary procedures used to convert raw fishery data into an expanded catch and effort estimate at geospatial coordinates. The documentation will allow new users to efficiently familiarize themselves with the database contents and extract data for reporting under various domestic and international obligations.

REFERENCES

- Argue, A.W., W. Shaw, and N. Williscroft. 1999 MS. An update for Canadian albacore fisheries in the north and south Pacific ocean. 8pp. Document submitted by DFO to the twelve Meeting of the Standing Committee on Tuna and Billfish in Tahiti, French Polynesia, June 16-23, 1999.
- Argue, A.W. and W. Shaw. 2000 MS. An update for Canadian tuna fisheries in the north and south Pacific ocean. 17pp. Document submitted by DFO to the thirteenth Meeting of the Standing Committee on Tuna and Billfish in Noumea, New Caledonia, July 5-12, 2000.
- Shaw, W. 1997 MS. The Canadian albacore fishery off the west coast of British Columbia, 1996-97. 15 pp. Document submitted by DFO to the Fifteenth Meeting of the North Pacific Albacore Workshop, Nanaimo, B.C., December 1997.
- Shaw, W. 1999 MS. An update of the Canadian north Pacific albacore fishery. 6 pp. Document submitted by DFO to the Second Meeting of the Interim Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean, Honolulu, Hawaii, January 1999.
- Shaw, W. and A.W. Argue. 1999 MS. The Canadian albacore fisheries in the north Pacific ocean, 1995-1998. Document submitted by DFO to the Sixteenth Meeting of the North Pacific Albacore Workshop, Kesennuma, Japan, November 4-6, 1999.
- Shaw, W. and A.W. Argue. 2000 MS. The 1999 Canadian north Pacific albacore troll fishery. Document submitted by DFO to the Seventeenth Meeting of the North Pacific Albacore Workshop, Taipei, Taiwan, December 6-13, 2000.
- Shaw, W. and M. Stocker. 2002 MS. The 2000 and 2001 Canadian North Pacific albacore troll fishery. Document submitted by DFO to the Eighteenth Meeting of the North Pacific Albacore Workshop, La Jolla, CA, December 4-11, 2002. NPALB/02/16: 22p.
- Stocker, M. and W. Shaw. 2004a MS. The 2002 Canadian north Pacific albacore troll fishery. Document submitted by DFO to the Fourth Meeting of the Interim Scientific Committee on Tuna and Tuna-like Species in the North Pacific Ocean (ISC), Honolulu, Hawaii, 26 January-4 February, 2004. ISC/04/Plenary/1: 11p.
- Stocker, M. and W. Shaw. 2004b MS. The 2002 and 2003 Canadian north Pacific albacore troll fishery. Document submitted by DFO to the Nineteenth Meeting of the North Pacific Albacore Workshop, Nanaimo, BC, November 25-December 2, 2004. NPALB/04/03: 11p.

Stocker, M. and W. Shaw. 2005 MS. The 2004 Canadian north Pacific albacore troll fishery. Document submitted by DFO to the ISC Albacore Working Group Meeting, NOAA Fisheries, Southwest Fisheries Science Center, La Jolla, CA, USA, November 28- December 2, 2005. ISC-ALBWG/05/12: 10p.

Ware, D.M. and K.L.Yamanaka. 1991 MS. Catch statistics for the Canadian albacore tuna fishery: 1945-1990. 4 pp. Document submitted by DFO to the Annual Meeting of the International North Pacific Fisheries Commission, Tokyo, Japan, November 1991.

Table 1. Fishery statistics for the Canadian north Pacific albacore tuna fishery.

Fishing Season	Total Catch (t)	Effort (v-d)	Total Vessels	Cpue (kg/v-d)
1995	1,720	5,909	284	291
1996	3,591	9,164	292	392
1997	2,433	4,637	197	525
1998	4,188	6,032	213	694
1999	2,641	6,776	233	390
2000	4,465	8,691	238	514
2001	4,985	9,826	244	507
2002	5,022	8,235	229	610
2003	6,735	8,315	193	810
2004	7,842	9,914	220	791
2005 ¹	4,963	8,530	201	582

¹Preliminary data

Table 2. Canadian total catch (t) of north Pacific albacore tuna by FAO statistical area.

FAO Statistical Area	2001	2002	2003	2004	2005
Northeast Pacific, Area 67	4,674	4,731	6,314	7,696	4,951
Northwest Pacific, Area 61	159	131	330	44	12
Eastern Central Pacific, Area 77 ²	152	160	91	102	0
TOTALS	4,985	5,022	6,735	7,842	4,963

²Excludes catch data from below the equator

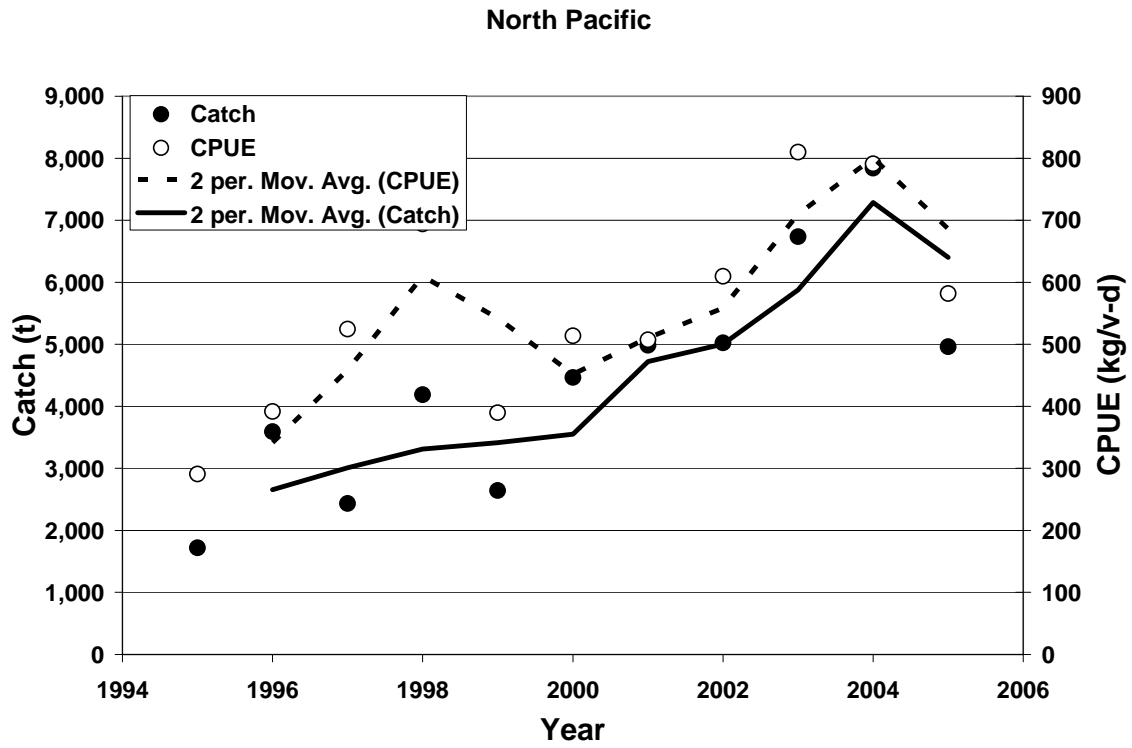


Figure 1. Canadian North Pacific albacore tuna catch and CPUE from 1995 to 2005.