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The 1977 Canadian offshore catch statistics of the squid,  
Illex illecebrosus, fishery in ICNAF Subareas 3 and 4

by

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Introduction

The increased landings in 1977 of the squid Illex illecebrosus both inshore and offshore demonstrate its economic importance in Subareas 3 and 4 (Amaratunga et al, STACRES, 1978b). Further importance is recognized by the offshore landings in 1977 in relation to the Canadian allocations.

The 1977 Canadian offshore squid fishery in Subareas 3 and 4 consisted of arrangements between Canada and Poland, USSR, and the Fed. Rep. of Germany.

Catch Data

Catch information from Poland and USSR was usually reported weekly, although some vessel reports were received on a daily basis. The squid catch and by-catch were reported separately. Effort, when available, was recorded as days on ground.

The Federal Rep. of Germany recorded data on a set-by-set basis, which included a centralized location for each day's fishing, number of sets made, with duration and catch composition. These data supply an estimation of effort on a squid-directed fishery. Although most landings had mixed catches, by-catch free sets were available for analyses.

All data were summarized in bi-weekly periods and tabulated by country (Table 1). Cumulative catch is represented (Figure 1) through the season to indicate fishing activities.

The data obtained from the Fed. Rep. of Germany were separately depicted (Table 2) giving catch statistics for the 1977 season, indicating hours fished. Figure 2 represents catch performance in relation to effort.

Observations

A total catch of 8,034.1 MT was recorded with Poland, USSR, and Fed. Rep. of Germany fishing 2,644.7, 940.0, and 4,449.4 MT respectively. The total fishing period of 28 weeks indicates only the duration for which these countries were contracted to fish.

The arrangement with Fed. Rep. of Germany consisted of five separate cruises, as listed below. The first cruise is presented here in two parts, the first part (May 17 to June 12) showing small squid catch and large by-catch, the latter representing the total cruise showing a larger squid catch and small by-catch after June 12.

Cruise information from Fed. Rep. Germany

May 17, 1977 - Begins Fishing  
June 23, 24, and 25 - Unloads

Catch May 17 to June 12

Squid	203.4 MT
By-Catch	776.1 MT
Total Catch	979.5 MT
Total Hours	402.0
Effort MT/HR.	2.44

Comments

First day of cruise St. Pierre Bank, balance of fishing on Scotian Shelf. Before June 12, by-catch was high. After 12th, all fishing was Western Bank and Southwest to Browns Bank. By-catch decreased, squid was major catch.

Catch May 17 to June 22

Squid	431.9 MT
By-Catch	900.1 MT
Total Catch	1,332.0 MT
Total Hours	539.0
Effort MT/HR.	2.47

June 26 - Fishing Resumes  
July 15 to 21 - Unloads

Catch June 26 to July 14

Squid	916.0 MT
By-Catch	327.5 MT
Total Catch	1,243.5 MT
Total Hours	241.0
Effort MT/HR.	5.16

Comments

All fishing in Western Gully.  $\approx 42^{\circ}50'N$ ;  $62^{\circ}50'W$ . Squid catch higher than by-catch.

July 22 - Fishing Resumes  
 Aug. 7 to Aug. 14 - Unloads

Catch July 22 to Aug. 7, 1977

Comments

Squid	1,059.0 MT	All fishing in Western Gully. ≈ 42°50'N; 62°50'W. Very low by-catch.
By-Catch	88.0 MT	
Total Catch	1,147.0 MT	
Total Hours	224.0	
Effort MT/HR.	5.12	

Aug. 15 - Fishing Resumes  
 Sept. 16 to Oct. 6 - Unloads

Catch - Aug. 15 to Sept. 16, 1977

Comments

Squid	1,023.0 MT	14 - 15 Scotian Shelf, left area until Sept. 3. Sept. 4 - 16 on Western Gully, catch totally squid.
By-Catch	35.0 MT	
Total Catch	1,058.0 MT	
Total Hours	225.0	
Effort MT/HR.	4.70	

Oct. 7, 1977 - Fishing Resumes  
 Oct. 26 - Unloads

Catch - Oct. 7 to Oct. 26, 1977

Comments

Squid	1,019.5 MT	Mainly on Western Gully, ≈ 42°50'N; 63°00'W, directed towards squid, low by-catch.
By-Catch	49.5 MT	
Total Catch	1,069.0 MT	
Total Hours	363.0	
Effort Mt/HR.	2.94	

The squid catch in May was relatively low as compared to by-catch but increased through the rest of the season with a corresponding decrease in by-catch. Occasional by-catch free trawls were observed early in August and progressed to completely by-catch free trawls for the period Sept. 4 to 16. October fishing showed minimal by-catch. This period corresponds with the onset of female sexual maturity and late maturity stages in males (which may be associated with a decrease in feeding activity; Amaratunga et al, 1978b; Durward et al, 1978). These catch/effort statistics show efficiency is greatest after mid-June and supports management propositions presented by Amaratunga et al (1978b).

REFERENCES

1. Amaratunga, T., M. Roberge, and L. Wood. 1978b. A study of the 1977 international catch statistics for the squid Illex illecebrosus fishery in ICNAF Subareas 3 and 4. STACRES Cuba meeting. ICNAF Res.Doc. 78/II/3, Serial No. 5155.
2. Durward, R.D., T. Amaratunga, and R. O'Dor. 1978. Maturation index and fecundity for female Illex illecebrosus (LeSueur, 1821). STACRES Cuba meeting. ICNAF Res.Doc. 78/II/1, Serial No. 5153.

TABLE 1. Catch statistics of all joint ventures for 1977, summarized in bi-weekly periods.

Period Beginning	Poland	USSR	Fed. Rep. Germany	Total
Apr. 17	-	-	-	-
May 2	-	-	-	-
May 16	-	-	59.4	59.4
May 30	-	-	144.0	144.0
June 13	-	-	283.5	283.5
June 27	-	-	649.0	649.0
July 11	-	-	372.0	372.0
July 25	-	-	899.0	899.0
Aug. 8	722.6	-	125.0	847.6
Aug. 22	1,208.5	123.0	-	1,331.5
Sept. 5	448.8	279.0	898.0	1,625.8
Sept. 19	14.5	380.0	-	394.5
Oct. 3	2.5	128.0	631.0	761.5
Oct. 17	16.4	10.0	388.5	437.9
Oct. 31	217.7	19.0	-	213.7
Nov. 14	13.7	1.0	-	14.7
Nov. 28	-	-	-	-
<b>TOTALS</b>	<b>2,644.7</b>	<b>940.0</b>	<b>4,449.4</b>	<b>8,034.1</b>

TABLE 2. Catch statistics for the 1977 season by the Fed. Rep. Germany indicating hours fished and effort.

Period Beginning	Fed. Rep. Germany				
	Squid Catch (MT)	By-Catch (MT)	Total Catch (MT)	Total Hours	Effort MT/HR.
Apr. 17	-	-	-	-	-
May 2	-	-	-	-	-
May 16	59.4	368.1	427.5	204.0	2.10
May 30	144.0	408.0	552.0	198.0	2.79
June 13	283.5	179.0	462.5	150.0	3.08
June 27	649.0	205.0	854.0	181.0	4.72
July 11	372.0	77.5	449.5	86.0	5.23
July 25	899.0	78.0	977.0	185.0	5.28
Aug. 8	125.0	35.0	160.0	17.0	9.41
Aug. 22	-	-	-	-	-
Sept. 5	898.0	-	898.0	208.0	4.32
Sept. 19	-	-	-	-	-
Oct. 3	631.0	33.5	664.5	191.0	3.48
Oct. 17	388.5	16.0	404.5	170.0	2.38
Oct. 31	-	-	-	-	-
Nov. 14	-	-	-	-	-
Nov. 28	-	-	-	-	-
<b>TOTALS</b>	<b>4,449.4</b>	<b>1,400.1</b>	<b>5,849.5</b>	<b>1,590.0</b>	<b>42.79</b>

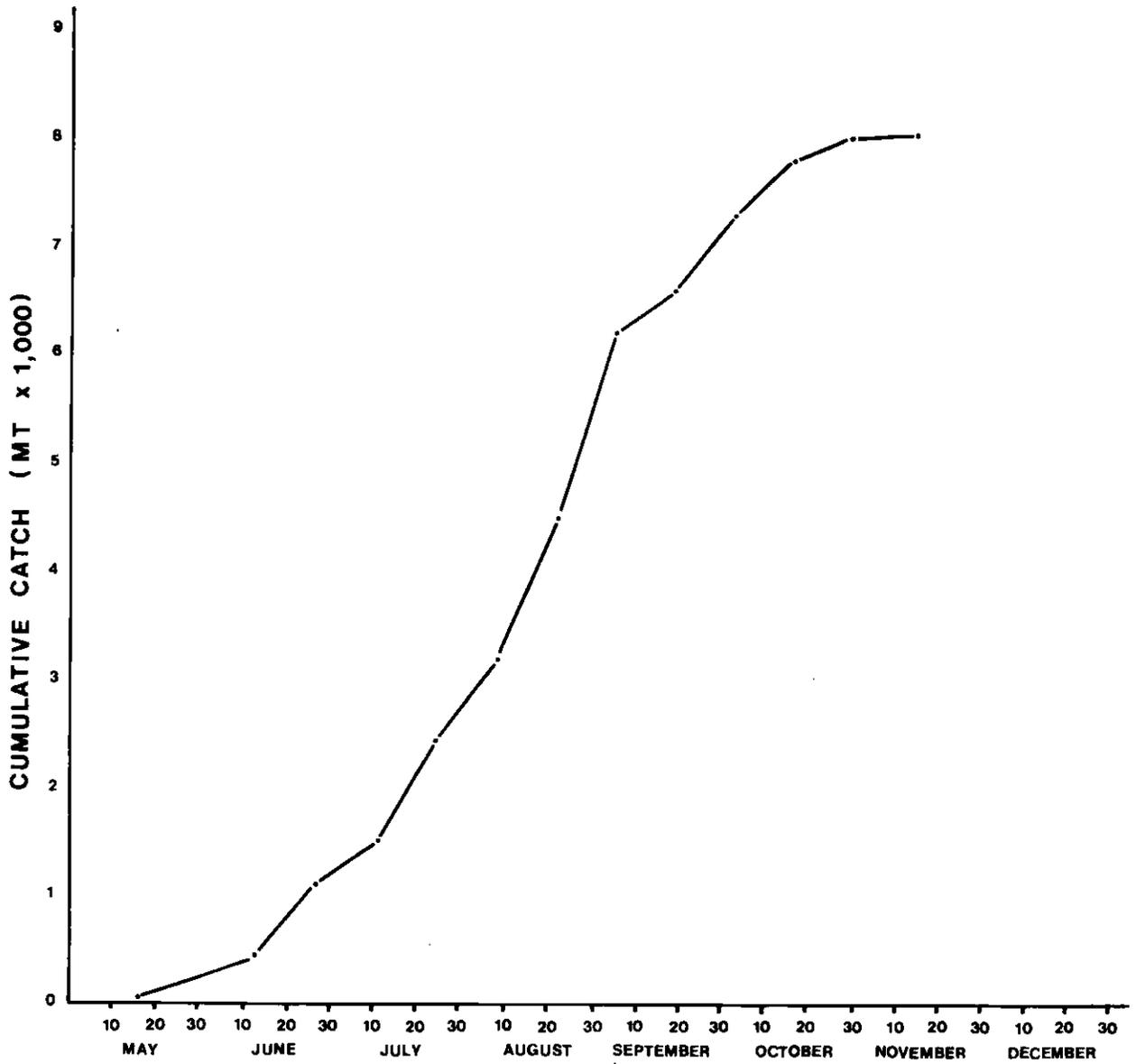


Figure 1. Cumulative catch by all joint ventures in 1977 squid fishery.

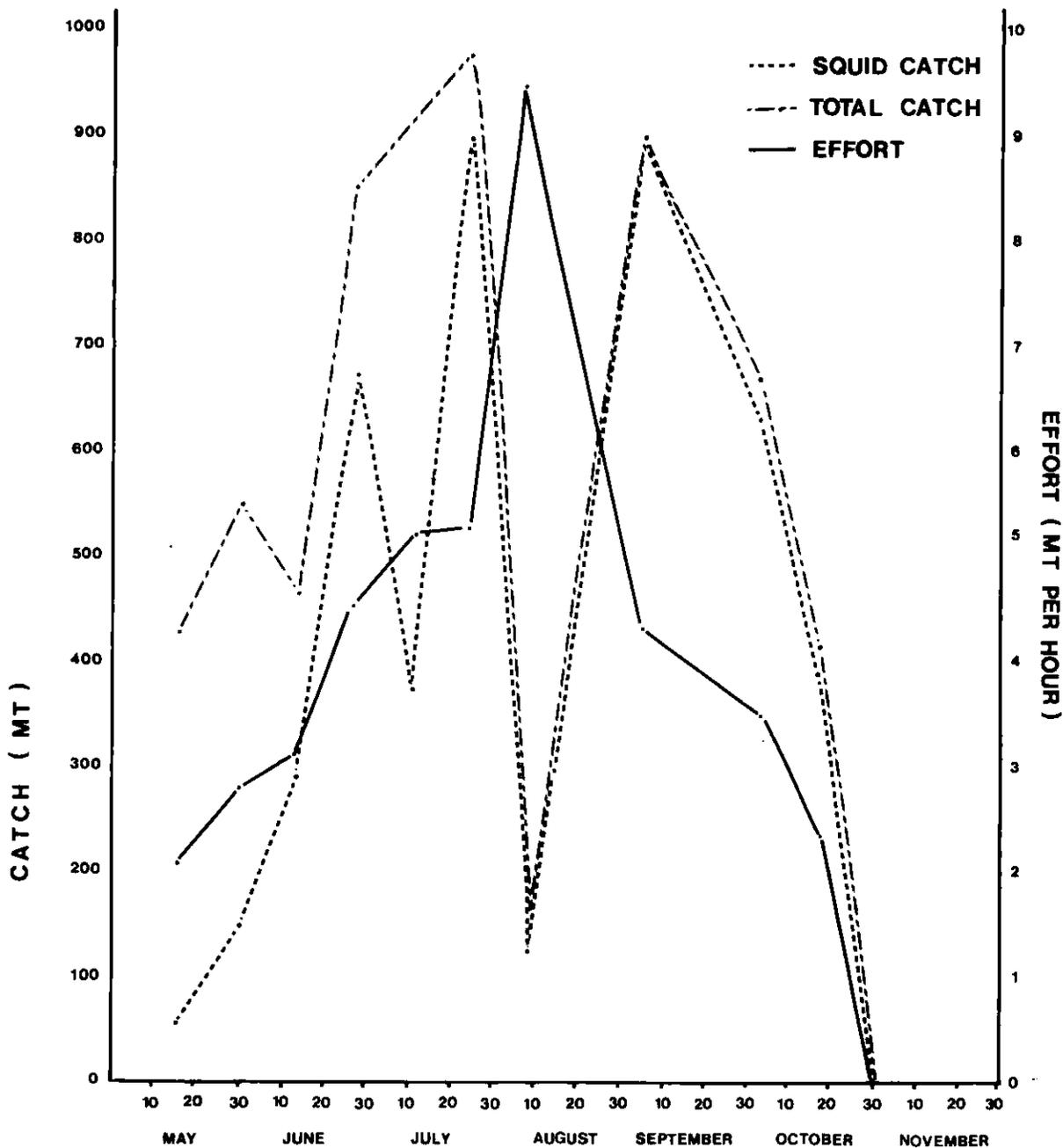


Figure 2. Catch performance through the 1977 season by the Fed. Rep. Germany, indicating effort.

