



**SCIENTIFIC COUNCIL MEETING – JUNE 2000**

Cuban Research Report for 1999

by

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**SUBAREA 4**

**A) Status of the fishery.**

In 1999 three Cuban commercial trawlers conducted a directed fishery on silver hake southward of the small mesh gear line (SMGL) at the edge of the Scotian shelf. An early start of the operation was observed (January) with two vessels, while a third was further involved in the fishery in March. Fishing season lasted until July. Cuban fleet deployment into the *Silver Hake Box* extended largely in division 4W, where the bulk of the fishing activities took place (Fig. 1). The most intensively fished area was that between 62°00'–62° 40'W, encompassing the “No Name Canyon” region.

Silver hake total catch during 1999 declined to 3851.5 tons (Table 1), a 38.6% decrease from 6280.7 tons landed in 1998. Some factors as avoidance of traditionally good fishing areas due to gear conflict (in Div. 4X), reduced effort, high incidence of adverse weather conditions, technical condition of the fleet as well as a lower silver hake abundance in 1999 related to 1998, have been stated as explanations for the decline.

Expended effort in trawling hours increased as season progressed, attaining a peak of 1000.5 hours in May (Fig. 2). As former mentioned, the bulk of the fishing effort of the Cuban fleet was executed in Div. 4W, which accounted for 99.8%. Effort level as almost negligible in Div. 4Vs, while no fishery took place in Div. 4X.

Silver hake catch per unit of effort per months in 1999 remained almost lineal through the season at the level of 1.0 t/h (Table 2), with the exceptions of April and July when the figures dropped to similar values (0.6 t/h). 1999 catch rates, as compared to 1998s showed a general decline in all months (except for July). As a result, a significant difference in curve patterns for both years is observed (Fig. 3), with a mean annual catch rate of 0.89 t/h for 1999 and a higher value in 1998 (1.19 t/h), thus indicating a lower silver hake abundance in the first year and a more productive fishery in 1998.

Silver hake catches increased steadily from January to June (except for April) and declined abruptly in July (Fig. 4) when fishing effort was drastically reduced as a result of low silver hake availability into the *Box*. Catch peaked in May-June with almost similar values of 937.0 tons

**B) Special Research Studies.**

**1) Environmental researches.**

No research related to environment was carried out in Subarea 4.

**2) Biological studies**

No biological samplings or special studies were performed

**SUBAREA 3**

**A) Status of the fishery.**

A fishery on northern shrimp (*Pandalus borealis*) in Div. 3M was conducted for the first time by the Cuban fleet on Flemish Cap. Fishing for shrimp took place during late November and December 1999 with a sole large tonnage trawler participating in the fishery. A shrimp overall catch of 119.1 tons was obtained.

Fishing activities were carried out mainly between 46°35'-48°25'N and 44°08'-46°10'W with most of the activity in the western side of the bank (Fig. 5).

Table 3 shows details of catch, hours fished and CPUE in the fishery. Expended effort during December was significant higher than November's, as the fishery took only a few days of the latter month. Although that difference, monthly catch rates were almost the same, showing values of 0.32 and 0.36 t/h, respectively.

**B) Special Research Studies.**

**1) Environmental researches.**

No research related to environment was carried out in Subarea 3.

**2) Biological studies**

Biological samplings on shrimp were performed on a Cuban vessel in Div. 3M in November-December 1999. Sampling was conducted by an observer following the requirements of the NAFO international observer program for the shrimp fishery.

Table 1. Summary of catches (t) of the main species in 1998 and 1999.

Species	1998				1999		
	4W	4X	4Vs	Total	4W	3M	Total
<i>Silver hake</i>	6274.4	2.9	3.4	6280.7	3851.5		3851.5
<i>Short-finned squid</i>	1083.9	0.4	0.5	1084.8	279.5		279.5
<i>Pollock</i>	7.4	0.10		7.5	5.8		5.8
<i>Haddock</i>	11.8	0.04	0.03	11.8	3.8		3.8
<i>Cod</i>	0.5			0.5	0.02		0.02
<i>Red hake</i>	118.0	0.1	0.2	118.3	86.4		86.4
<i>Mackerel</i>	6.8	0.1		6.8	12.6		12.6
<i>Herring</i>	133.1	0.8		133.8	120.5		120.5
<i>Shrimp</i>						119.1	119.1
<i>Groundfish (NS)</i>	0.3			0.3	0.6		0.6
<b>TOTAL</b>	<b>7636.1</b>	<b>4.4</b>	<b>4.1</b>	<b>7644.6</b>	<b>4360.7</b>	<b>119.1</b>	<b>4479.8</b>

Table 2. Catch, effort and CPUE of the Cuban directed silver hake fishery in Div. 4VWX during 1998 and 1999.

<i>DIVISION 4W</i>						
Months	1998			1999		
	Catch (t)	Hours fished	CPUE (t/h)	Catch (t)	Hours fished	CPUE (t/h)
<i>Jan</i>				152.3	156.0	0.98
<i>Feb</i>				304.8	290.25	1.05
<i>Mar</i>	432.8	317.75	1.36	651.5	628.5	1.04
<i>Apr</i>	1259.2	637	1.98	560.7	812.25	0.69
<i>May</i>	1912.2	1433.5	1.33	936.7	1000.5	0.94
<i>June</i>	2103.6	1467.8	1.43	937.5	958.5	0.98
<i>July</i>	476.2	1103.8	0.43	308.0	449.75	0.68
<i>Aug</i>	3.1	109	0.03			
<i>Sept</i>	8.5	55	0.15			
<i>Dec</i>	78.8	93.25	0.85			
<b>TOTAL</b>	<b>6274.4</b>	<b>5217</b>	<b>1.20</b>	<b>3851.5</b>	<b>4295.75</b>	<b>0.90</b>
<i>DIVISION 4X</i>						
Months	1998			1999		
	Catch (t)	Hours fished	CPUE (t/h)	Catch (t)	Hours fished	CPUE (t/h)
<i>June</i>	2.9	6	0.48			
<b>TOTAL</b>	<b>2.9</b>	<b>6</b>	<b>0.48</b>			

Table 2. Continued.

<i>DIVISION 4Vs</i>						
	1998			1999		
Months	Catch (t)	Hours fished	CPUE (t/h)	Catch (t)	Hours fished	CPUE (t/h)
<i>July</i>				0	4.5	0
<i>Aug</i>	3.4	55.25	0.06			
<b><i>TOTAL</i></b>	<b>3.4</b>	<b>55.25</b>	<b>0.06</b>	<b>0</b>	<b>4.5</b>	<b>0</b>
<i>TOTAL DIVISIONS 4VWX</i>						
	1998			1999		
Months	Catch (t)	Hours fished	CPUE (t/h)	Catch (t)	Hours fished	CPUE (t/h)
<i>Jan</i>				152.3	156.0	0.98
<i>Feb</i>				304.8	290.25	1.05
<i>Mar</i>	432.8	317.75	1.36	651.5	628.5	1.04
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<i>May</i>	1912.2	1433.5	1.33	936.7	1000.5	0.94
<i>June</i>	2106.5	1473.8	1.43	937.5	958.5	0.98
<i>July</i>	476.2	1103.8	0.43	308.0	454.25	0.68
<i>Aug</i>	6.5	164.25	0.04			
<i>Sept</i>	8.5	55	0.15			
<i>Dec</i>	78.8	93.25	0.85			
<b><i>TOTAL</i></b>	<b>6280.7</b>	<b>5278.25</b>	<b>1.19</b>	<b>3851.5</b>	<b>4300.25</b>	<b>0.90</b>

Table 3. Nominal catch , effort and catch rates in the Cuban shrimp fishery in Flemish Cap, 1999.

Month	Catch (t)	Hours fished	CPUE (t/h)
November	3.6	11	0.32
December	115.5	320	0.36
<b><i>TOTAL</i></b>	<b>119.1</b>	<b>331</b>	<b>0.35</b>

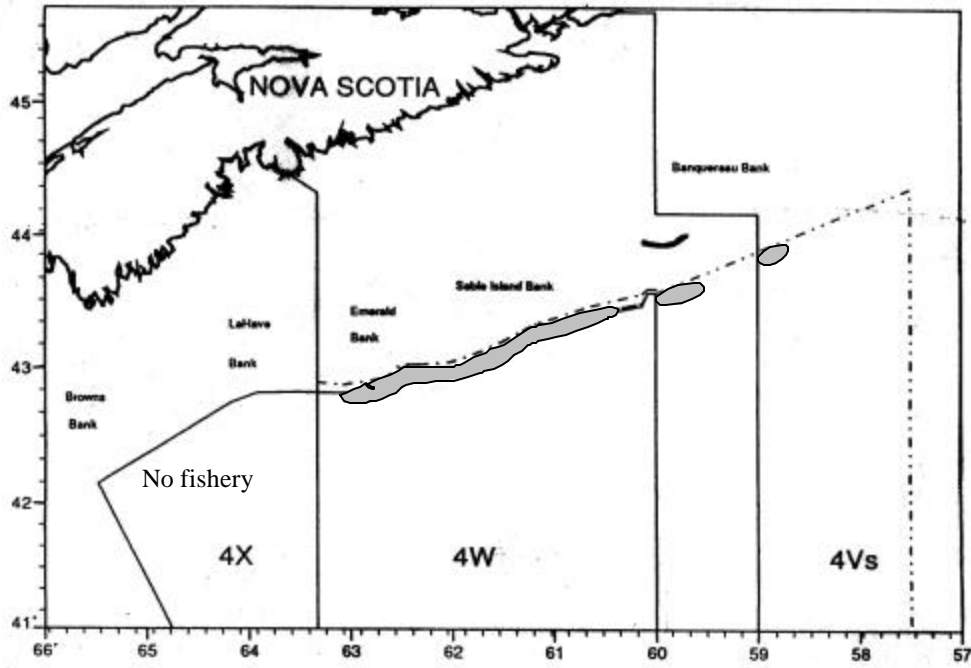


Fig. 1. Fishing area of the Cuban fleet into the *Silver Hake Box* during the 1999 fishing season.

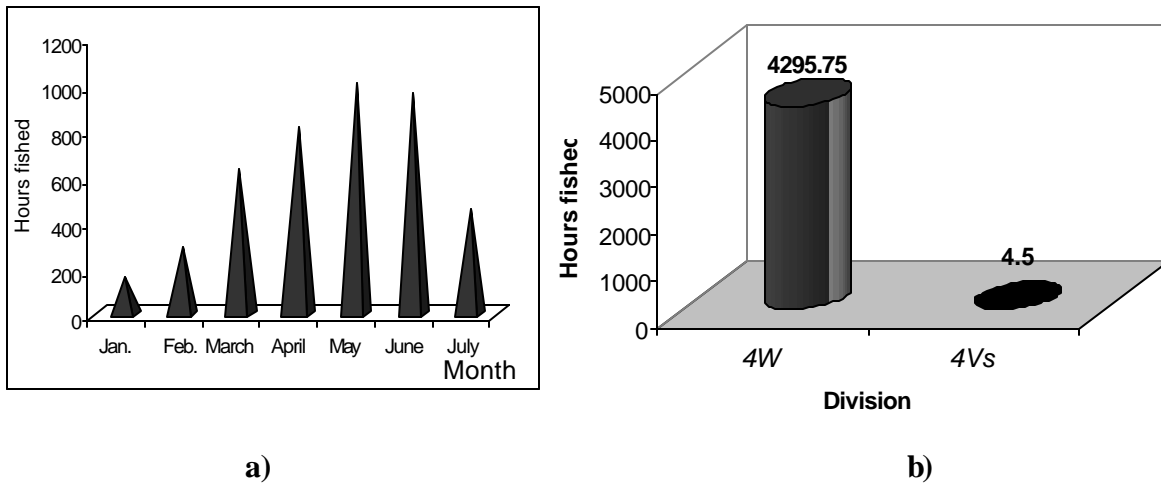


Fig. 2 Breakdown of the Cuban fleet fishing effort by months (a) and divisions (b) in the silver hake fishery during 1999.

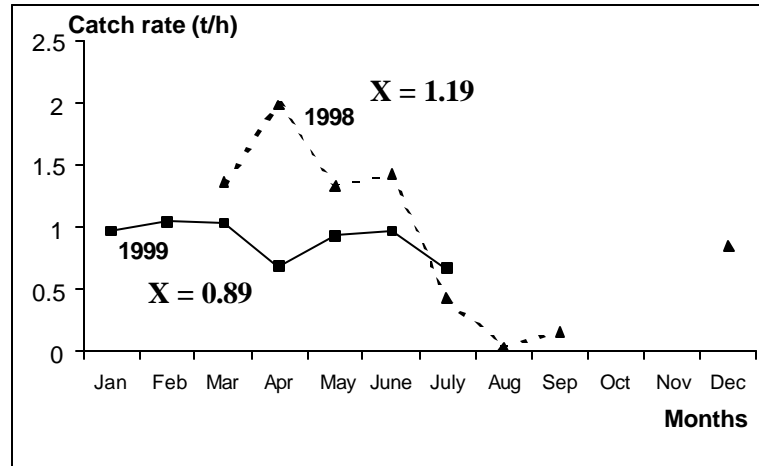


Fig. 3. Catch rates of the Cuban fleet in the directed silver hake fishery during 1998 and 1999.

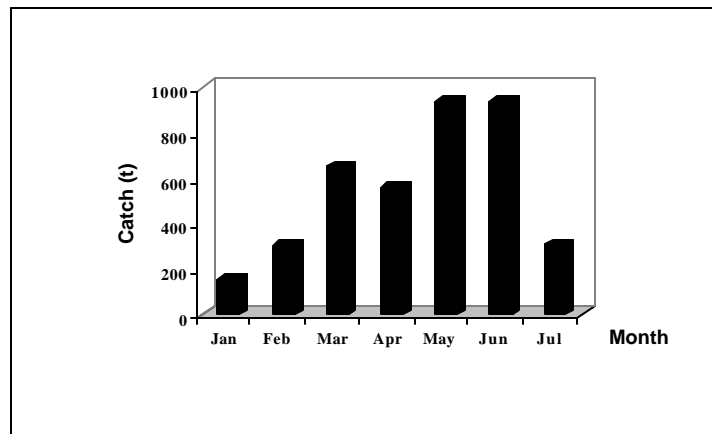


Fig. 4. Cuban silver hake catch by months in 1999.

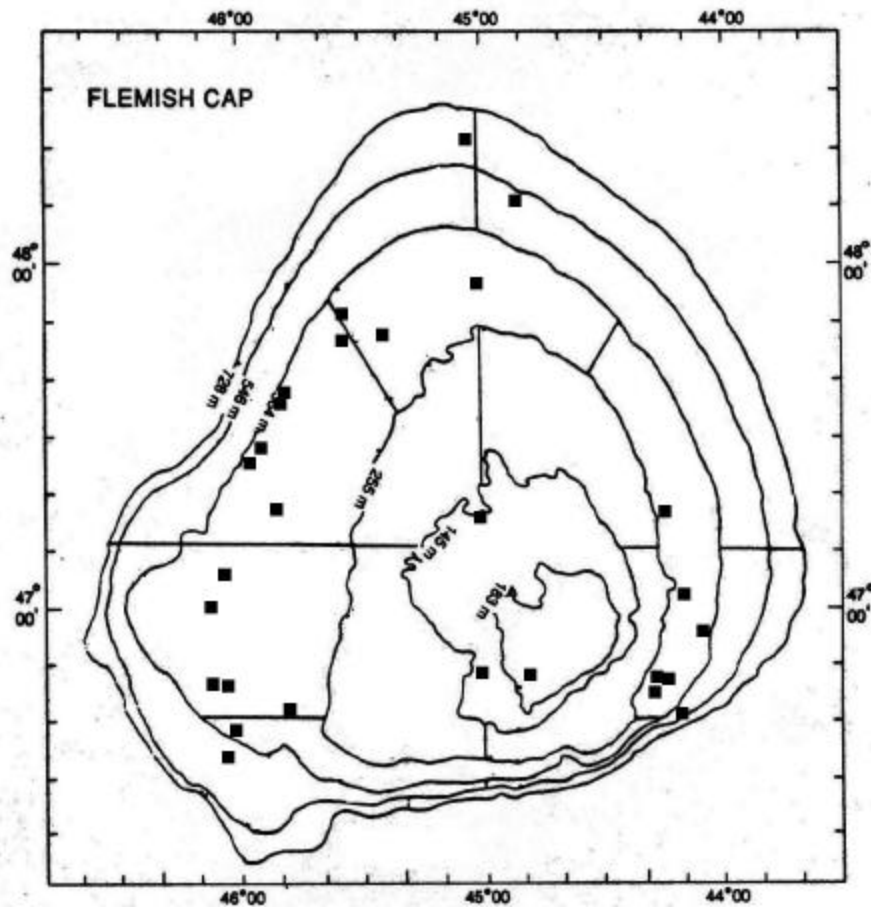


Fig. 5. Locations of fishing areas in the shrimp fishery of the Cuban fleet in Div. 3M during 1999.