

PECULIARITIES OF SMALL PELAGIC FISH SEASONAL MIGRATIONS ALONG THE NORTHWEST COAST OF AFRICA

Materials and methods

The results of the Russian fishing fleet operation in 1982 – 2007, mean monthly SSTs and their anomalies in one-degree squares (IGOSS), trip reports and biological analyses data obtained on board the commercial, reconnaissance and research vessels were used. Characteristic fishing periods during the year are defined.

Two periods are defined for the EEZ of Morocco. I. January-May. II. June-December.

Four periods are defined for EEZ Mauritania: I. November-January. II. February-April. III. May-July. IV. August-October.

Typical situations were determined in each characteristic fishing period. The SST anomalies were used as a basic criterion for typification.

Typical situation for the Morocco area corresponds to normal conditions with the SST anomaly between -0.2 and +0.2°C; from +0.3°C it is above the norm, from -0.3°C - below the norm.

For Mauritania the norm at the SST anomaly is between -0.4 and +0.4°C; from +0.5°C it is above the norm, from -0.5°C - below the norm.

Main peculiarities of fish migration, behavior and distribution are described for each typical situation. Analogue years are determined.

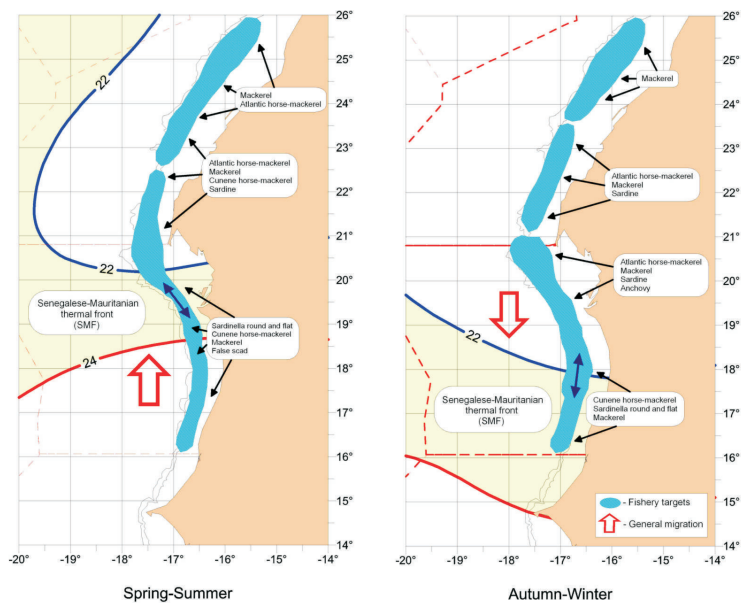


Fig. 1. Position of 22 and 24°C and general scheme of small pelagic fishes, the target of trawl fishing, within a year in the area of Mauritania and Morocco

Analogous years of typical situations depending on thermal conditions during characteristic fishing periods, Mauritania 1982 - 2007

Characteristic periods	SST, °C		
	Norm Departure from norm between -0.4 and +0.4	positive, from +0.5	negative, from -0.5
Years			
period I November-January	1985-1986, 1988-1991, 1995, 2000-2001, 2003-2005	1984, 1992, 1996-1999, 2002, 2006, 2007	1983, 1987, 1993-1994
period II February-April	1982, 1984, 1987-1989, 1991-1995, 2000, 2001, 2003, 2006	1983, 1990, 1996-1998, 2002, 2004-2005, 2007	1999
period III May-July	1982-1984, 1986, 1988-1989, 1993-1994, 1998, 2002, 2007	1985, 1987, 1995-1997, 1999-2001, 2003-2006	1990-1992
period IV August-October	1983, 1985-1988, 1991, 1993-1994, 1997, 2002, 2007	1989-1990, 1995-1996, 1998-2001, 2003-2006	1982, 1984, 1992

Duration of stay in the area and production indices in the fishery of main fish species depending on thermal conditions in EEZ of Mauritania (by the results of the Russian fleet operation in 1982-2007)

Thermal conditions	Indices	Cunene horse-mackerel	Mackerel	Sardinella
Norm	Stay in EEZ of IRM	6-7	6-8	5-6
Departure from the norm (between -0.4 and +0.4°C)	No. of months			
	Proportion in catches (%)	35-50	25-35	15-20
	RTMKS Catch, vessel-day (t)	40,0-50,0	19,0	25,0
Positive anomaly (Departure from the norm of +0.5°C)	Stay in EEZ of IRM	4-5	3-5	7-9
	No. of months			
	Proportion in catches (%)	30-40	15-20	40-50
Negative anomaly (Departure from the norm of -0.5°C)	Stay in EEZ of IRM	5-7	2-4	3-5
	No. of months			
	Proportion in catches (%)	20-30	5-10	12-18
	RTMKS Catch vessel-day (τ.)	20,0-30,0	10,0	18,0

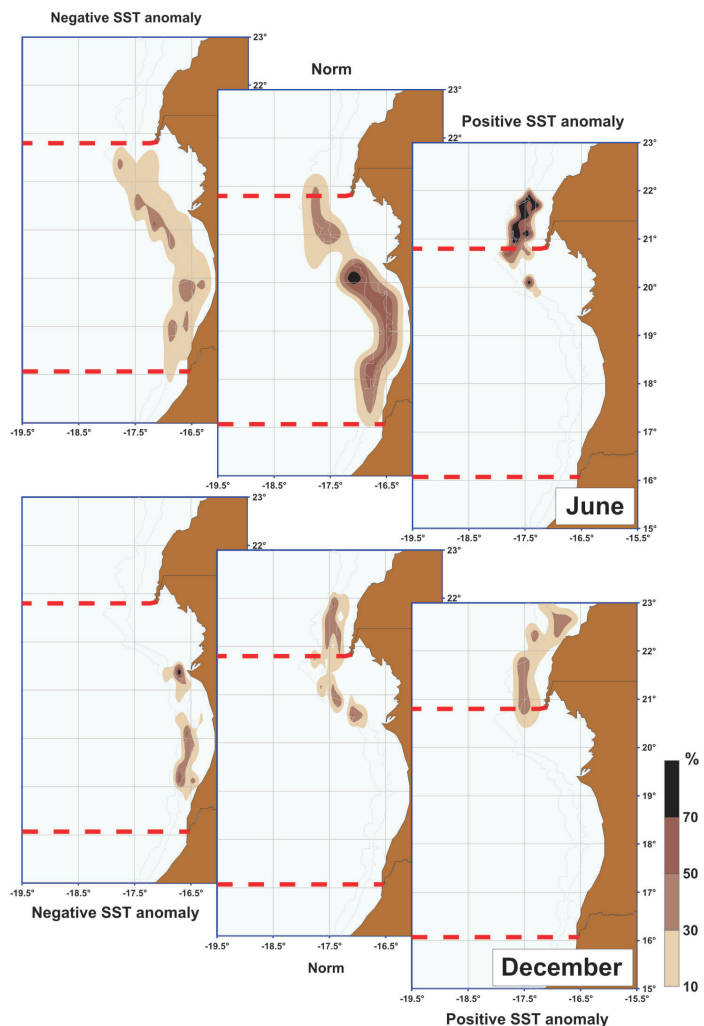


Fig. 2. Distribution of Cunene horse-mackerel in June and December in years with different thermal conditions