SAC GFCM
Sub-Committee on Stock Assessment

Date*	**21**	**October**	**2009**	**Code***	**DPS0309Naj**

Authors*

Najib EL OUAMARI

Affiliation*

Institut National de Recherche Halieutique, Centre Régional de Nador

Species Scientific name*

1 *Parapenaeus longirostris - DPS*

Source: GFCM Priority Species

2

Source: -

3

Source: -

Geographical area*

Western mediterranea

Geographical Sub-Area (GSA)*

03 - Southern Alboran Sea

Combination of GSAs 1

2

3

SAC GFCM - Sub-Committee on Stock Assessment (SCSA)

Assessment form

Sheet #0

Basic data on the assessment

Code: DPS0309Naj

Date*	21	Oct	2009	Authors*	Najib EL OUAMARI

Species Scientific name*	Parapenaeus longirostris - DPS	Species common name*	Deep water shrimp

Data Source

GSA*	03 - Southern Alboran Sea	Period of time*	October2007 to September 2008

Description of the analysis

Type of data*	Length frequencies	Data source*	Biological sampling
Method of assessment*	LCA	Software used*	VIT (Lleonar & Salat, 1992)

Sheets filled out

B	P1	P2a	P2b	G	A1	A2	A3	Y	Other	D	Z	C
1	---	1	1	---	1	1	1	1	---	1	1	---

Comments, bibliography, etc.

SAC GFCM - Sub-Committee on Stock Assessment (SCSA)	
Assessment form	**Sheet B** **Biology of the species**

Code: DPS0309Naj

Biology

Somatic magnitude measured (LH, LC, etc)*		LC		Units*	mm

Sex	Fem	Mal	Both	Unsexed		
Maximum size observed	38	42	42		Reproduction season	
Size at first maturity			23.44		Reproduction areas	
Recruitment size					Nursery areas	

Parameters used (state units and information sources)

			Sex			
		Units	female	male	both	unsexed
Growth model	L∞				49.86	
	K				0.5	
	t0				-0.33	
	Data source	Said BENCHOUCHA & al, 2005				
Length weight relationship	a				0.0051	
	b				2.256	
	M				0.7	

sex ratio (mal/fem)	1.27

Comments

SAC GFCM - Sub-Committee on Stock Assessment (SCSA)

Assessment form

Sheet P1
General information about the fishery

Code: DPS0309Naj

Data source*	National Office for fishing	Year (s)*	2000-2008
Data aggregation (by year, average figures between years, etc.)*			

Fleet and catches (please state units)

	Country	GSA	Fleet Segment	Fishing Gear Class	Group of Target Species	Species
Operational Unit 1*	MCO	03	E - Trawl (12-24 metres)	03 - Trawls	34 - Demersal slope species	DPS
Operational Unit 2						
Operational Unit 3						
Operational Unit 4						
Operational Unit 5						

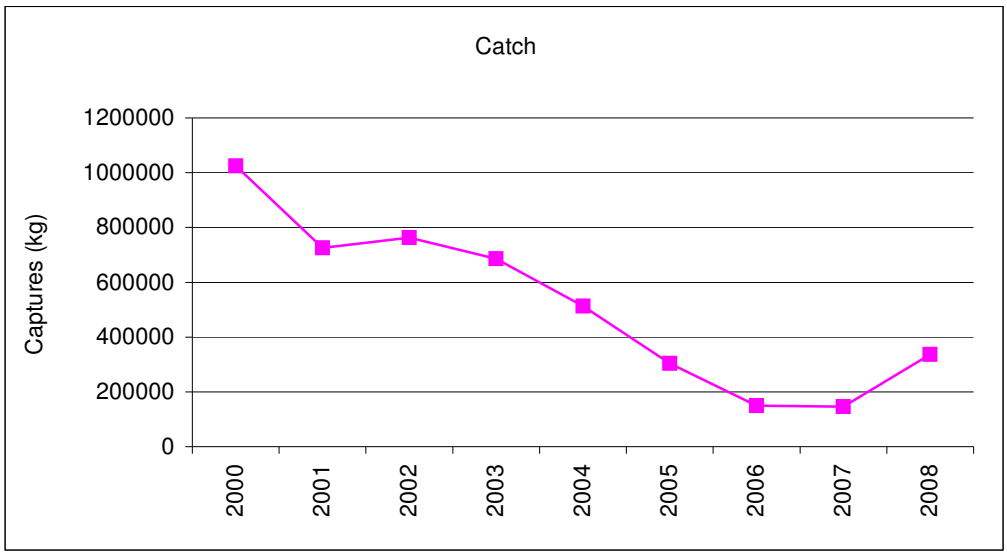
Operational Units*	Fleet (n° of boats)*	Kilos or Tons	Catch (species assessed)	Other species caught	Discards (species assessed)	Discards (other species caught)	Effort units
MCO 03 E 03 34 - DPS	114	Kg	337059				ishing trip
Total	114		337059				

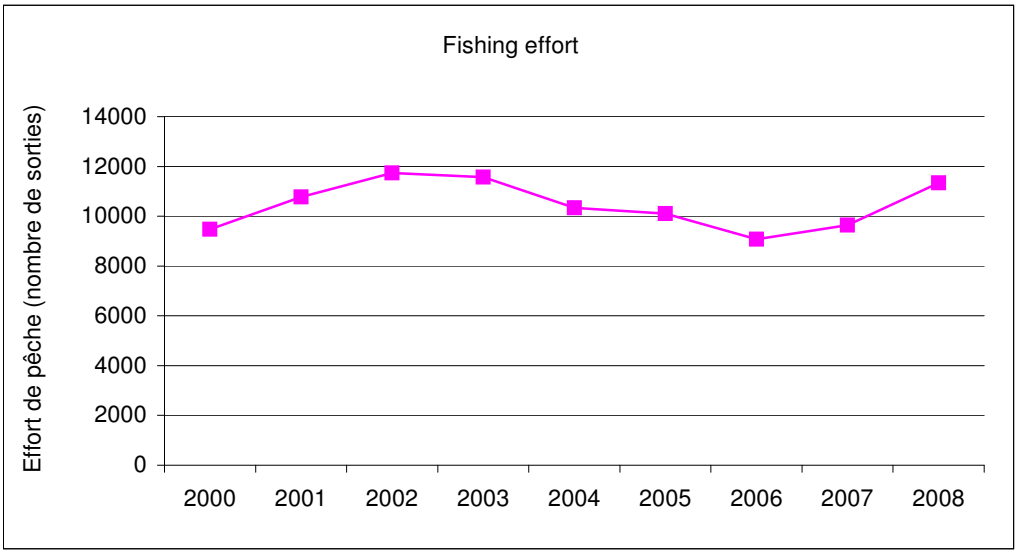
Legal minimum size	10,5 cm (total length)

Comments

This species is targeted exclusivelly by trawlers usiny trawl as fishing gear

Comments


Catch
Captures (kg)
1200000
1000000
800000
600000
400000
200000
0
2000
2001
2002
2003
2004
2005
2006
2007
2008


Fishing effort
Effort de pêche (nombre de sorties)
14000
12000
10000
8000
6000
4000
2000
0
2000
2001
2002
2003
2004
2005
2006
2007
2008

SAC GFCM - Sub-Committee on Stock Assessment (SCSA)

Assessment form

Sheet P2a
Fishery by Operational Unit

Code: DPS0309Naj

Data source*	Statistical system of INRH and National office for	OpUnit 1*	MCO 03 E 03 34 - DPS

Time series

Year*	2000	2001	2002	2003	2004	2005
Catch	1024276	725937	762494	685418	513328	304068
Minimum size						
Average size Lc						
Maximum size						
Fleet						

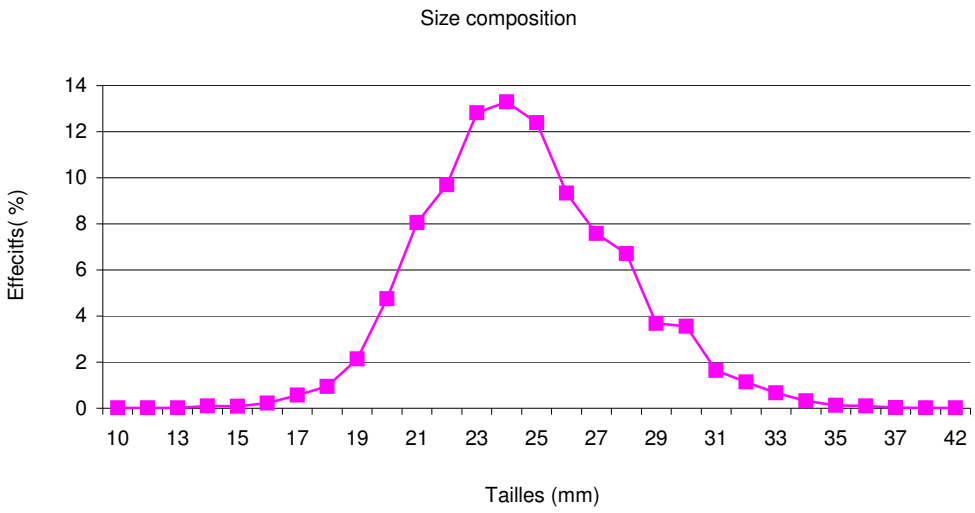
Year	2006	2007	2008			
Catch	150145	146000	337059			
Minimum size			10			
Average size Lc						
Maximum size			42			
Fleet			120			

Selectivity

L25	
L50	23.44
L75	
Selection factor	

Remarks

Structure by size or age



Data source*	Statistical system of INRH and National office for fish	OpUnit 1*	MCO 03 E 03 34 - DPS

Regulations in force and degree of observance of regulations

- Fishing license: fully observed
- Engine power limited to 500 CV: observed
- Mesh size in the cod-end (40 mm stretched): not fully observed
- Fishing forbiden upper 80 m depth in West mediterranean and 3 milles in the East of the mediteranean: not fully observed.

Accompanying species

Hake:

SAC GFCM - Sub-Committee on Stock Assessment (SCSA)

Assessment form

Sheet A1
Indirect methods: VPA, LCA

Code: DPS0309Naj

Sex*	Both

Analysis # *	1

Time series

Data	Size	Age
(mark with X)	X	

Model	Cohorts	Pseudocohorts
(mark with X)		X

Equation used	Standard VPA	Tunig method	
# of gears	1	Software	VIT
$F_{terminal}$	0.3		

Population results (please state units)

	Sizes	Ages		Amount	Biomass
Minimum	10mm		Recruitment		6176974447,16
Average			Average population		
Maximum	42mm		Virgin population		
Critical	20mm		Turnover		

Average mortality

		Gear					
	Total						
F_1	Fmean =0,791						
F_2							
Z							

(F1 and F2 represent different possible calculations. Please state them)

Comments

Plusieurs estimations du stock ont été essayées avec différentes valeurs de Fterminal pour comparer les résultats. la valeur de Fterminal adopté est de 0,3.

SAC GFCM - Sub-Committee on Stock Assessment (SCSA)	
Assessment form	**Sheet A2** **Indirect methods: data**

Code: DPS0309Naj

Sex*	Both	Gear*	Trawl	Analysis # *	VPA

Data	length frequencies data set

Data

The data used in this assessment are obtined by biological sampling for length frequencies of Parapenaeus longirostris landed in the GSA 03 corresponding to the morrocan Mediterranean waters, at the level of the port of Nador where more than 70% of the landing of this species is realised.

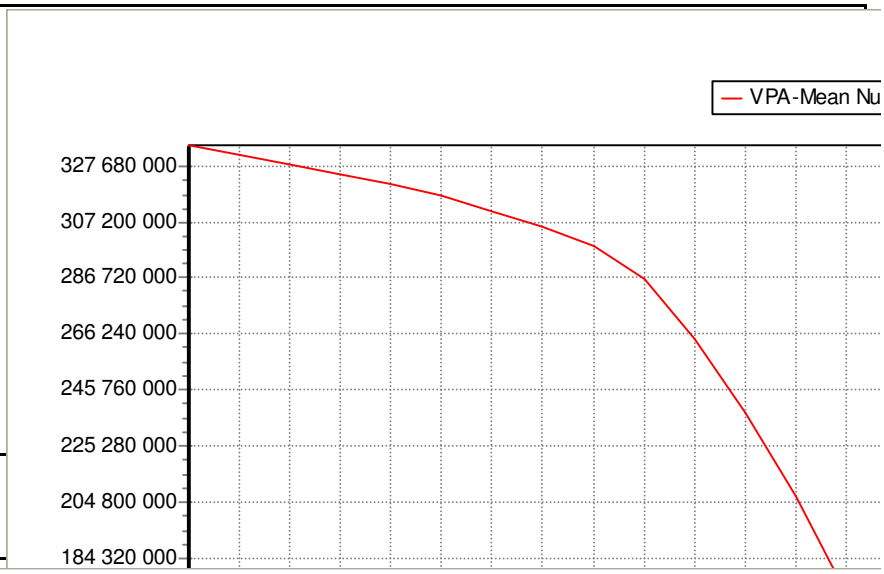
The sampling realized each month where 4 to 6 kg of Parapenaeus longirostris are analysed. Mesurment of length corresponds to the carapace length in mm.

SAC GFCM - Sub-Committee on Stock Assessment (SCSA)	
Assessment form	**Sheet A3** **Indirect methods: VPA results**

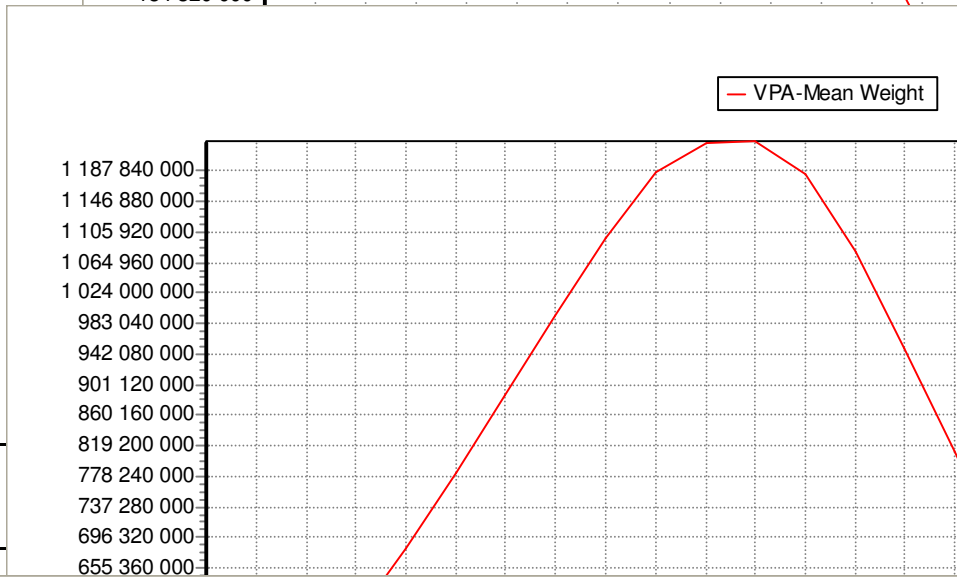
Code: DPS0309Naj

Sex*	Both	Gear*	Trawl	Analysis #*	**Standard VPA**

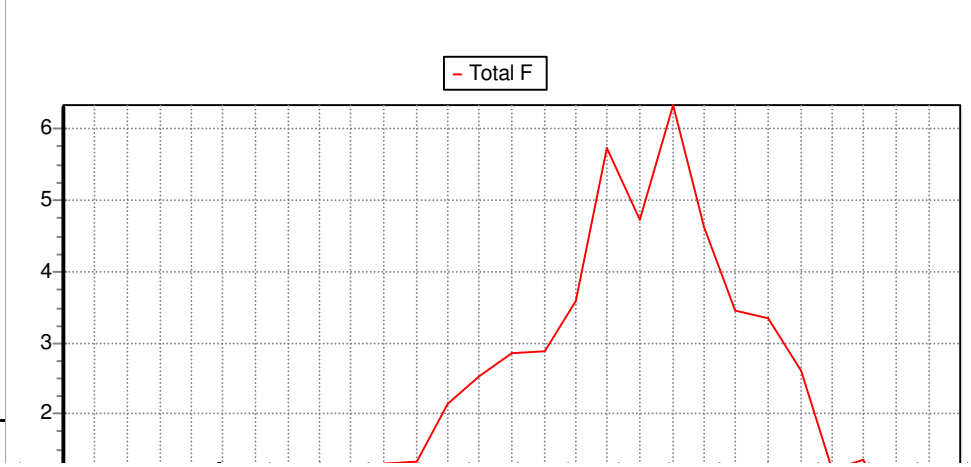
Population in figures



Population in biomass



Fishing mortality rates



SAC GFCM - Sub-Committee on Stock Assessment (SCSA)

Assessment form — **Sheet Y** — **Indirect methods: Y/R**

Code: DPS0309Naj

Sex	Both

Analysis #	**Standard VPA**

# of gears	1	Software	VIT

Parameters used

Vector F	
Vector M	0.7
Vector N	

Model characteristics

Results

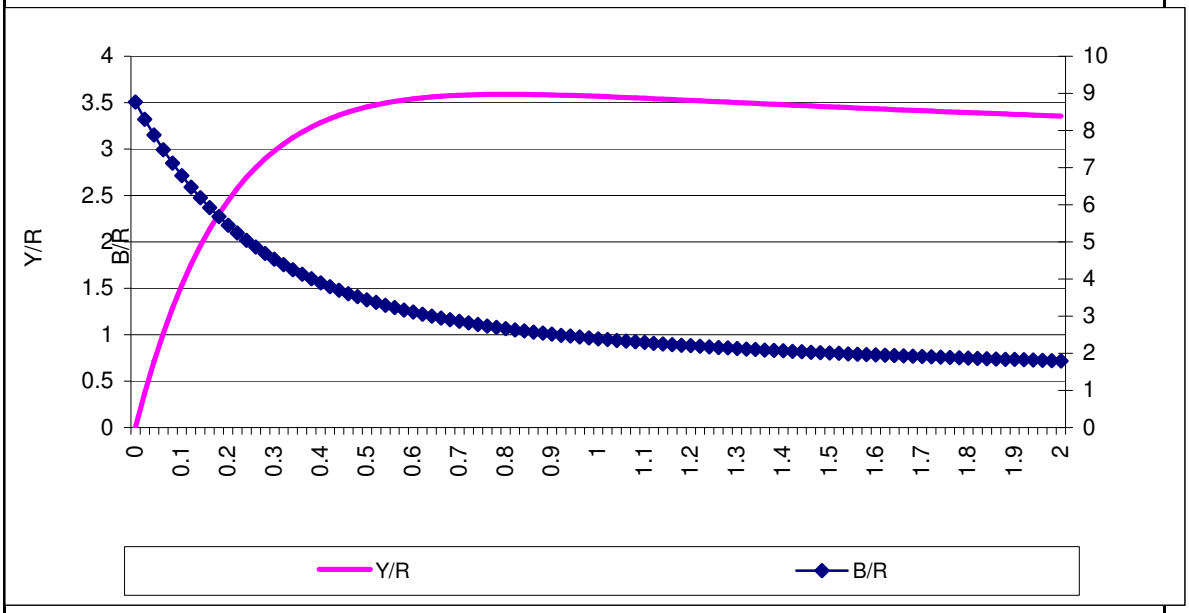
	Total	Gear			
Current YR	3.568				
Maximum Y/R	3.59				
Y/R 0.1	3.584				
F_{max}	0.8				
$F_{0.1}$	0.72				
Current B/R	2.391				
Maximum B/R	8.767				
B/R 0.1	2.816				

Comments

Il est à signaler que les valeurs de F ne sont pas des valeux absolues et elles correspondent aux "F factor".

Les valeurs de Fmax et F0,1 obtenus avec un Fterminal=0,7 sont de l'ordre de 0,7 et 0,5 respectivement.

Comments


Y/R
B/R
4
3.5
3
2.5
2
1.5
1
0.5
0
10
9
8
7
6
5
4
3
2
1
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2
Y/R
B/R

SAC GFCM - Sub-Committee on Stock Assessment (SCSA)	
Assessment form	**Sheet D** **Diagnosis**

Code: DPS0309Naj

Indicators and reference points

Criterion	Current value	Units	Reference Point	Trend	Comments
B					
SSB					
F					Fmax= 0,8; F0,1= 0,72
Y					
CPUE					

Stock Status* Use one (or both) of the following two systems for the stock assessment status description

Unidimensional		
	☐	? - (or blank) Not known or uncertain. Not much information is available to make a judgment;
	☐	U - Underexploited, undeveloped or new fishery. Believed to have a significant potential for expansion in total production;
	☐	M - Moderately exploited, exploited with a low level of fishing effort. Believed to have some limited potential for expansion in total production;
	☐	F - Fully exploited. The fishery is operating at or close to an optimal yield level, with no expected room for further expansion;
	◉	O - Overexploited. The fishery is being exploited at above a level which is believed to be sustainable in the long term, with no potential room for further expansion and a higher risk of stock depletion/collapse;
	☐	D - Depleted. Catches are well below historical levels, irrespective of the amount of fishing effort exerted;
	☐	R - Recovering. Catches are again increasing after having been depleted or a collapse from a previous;

Bidimensional

Exploitation rate

☐	No or low fishing
☐	Moderate fishing
☐	High fishing mortality
☐	Uncertain / Not assessed

Stock abundance

☐	Virgin or high abundance
☐	Intermediate abundance
☐	Low abundance

☐	Depleted
☐	Uncertain / Not assessed

Code: DPS0309Naj

Management advice and recommendations*

- The values of biological refence points are respectivelly 0,8 and 0,72. This values indicates that the Parapenaeus longirostris stock in Morrocan Mediterranea is overexploited.

- The fishing mortality applied on this ressorce shoud be reduced by 28% in order to sustainable the fishery.

- The reduction of fishing mortality may be by stopping the immigration of trawlers from Atlatic side of morocco to the mediterranean and to ecourage the trawlers fishing in the mediterranean to work in the Atlantic sea.

Advice for scientific research*

Les résultats obtenus sur la mortalité par pêche en focntion des classes de taille montre une chute surprenente sur les individus de grande taille, et ce ci peut être expliquer par la faible représentation de cette catégorie d'individus dans les échantillons analysés. Ce ci est due aussi à la valeur élevée de cette catégorie de taille de la crevette rose, ce qui rend la couverture de cette catégorie de taille difficile.

Avec le support des projets régionaux de la FAO dans la région méditerranéenne, il est recommandé de renforcer l'échantillonnage biologique de cette espèce à fin de collecter une base de données plus fiable pour une évaluation plus précise du stock de espèce.

Aussi, l'estimation des paramètres biologiques de cette espèce, notamment les paramètres de croissance, peut être réalisée dans groupe de travail qui sera organisé à l'échelle régional pour la standardisation de la méthodologie utilisée.