# SAC  GFCM
## Sub-Committee on Stock Assessment

**Date*** | 28 | October | 2011 | **Code*** | DPS0411AIN

**Authors*** | AINOUCHE Nawel

**Affiliation*** | CNRDPA. National Center of Research and Developement of Fishery and Aquaculture. Algeria

**Species Scientific name***

1   *Parapenaeus longirostris  -  DPS*
Source:  GFCM Priority Species

2
Source:  -

3
Source:  -

**Geographical area*** | Algeria

**Geographical Sub-Area (GSA)*** | 04  -  Algeria

Combination of GSAs
1
2
3

**Code: DPS0411AIN**

| Date* | 28 | Oct | 2011 | Authors* | AINOUCHE Nawel |
|---|---|---|---|---|---|

| Species Scientific name* | Parapenaeus longirostris  - DPS | Species common name* | crevette rose |
|---|---|---|---|

## Data Source

| GSA* | 04  -  Algeria | Period of time* | 2010 |
|---|---|---|---|

## Description of the analysis
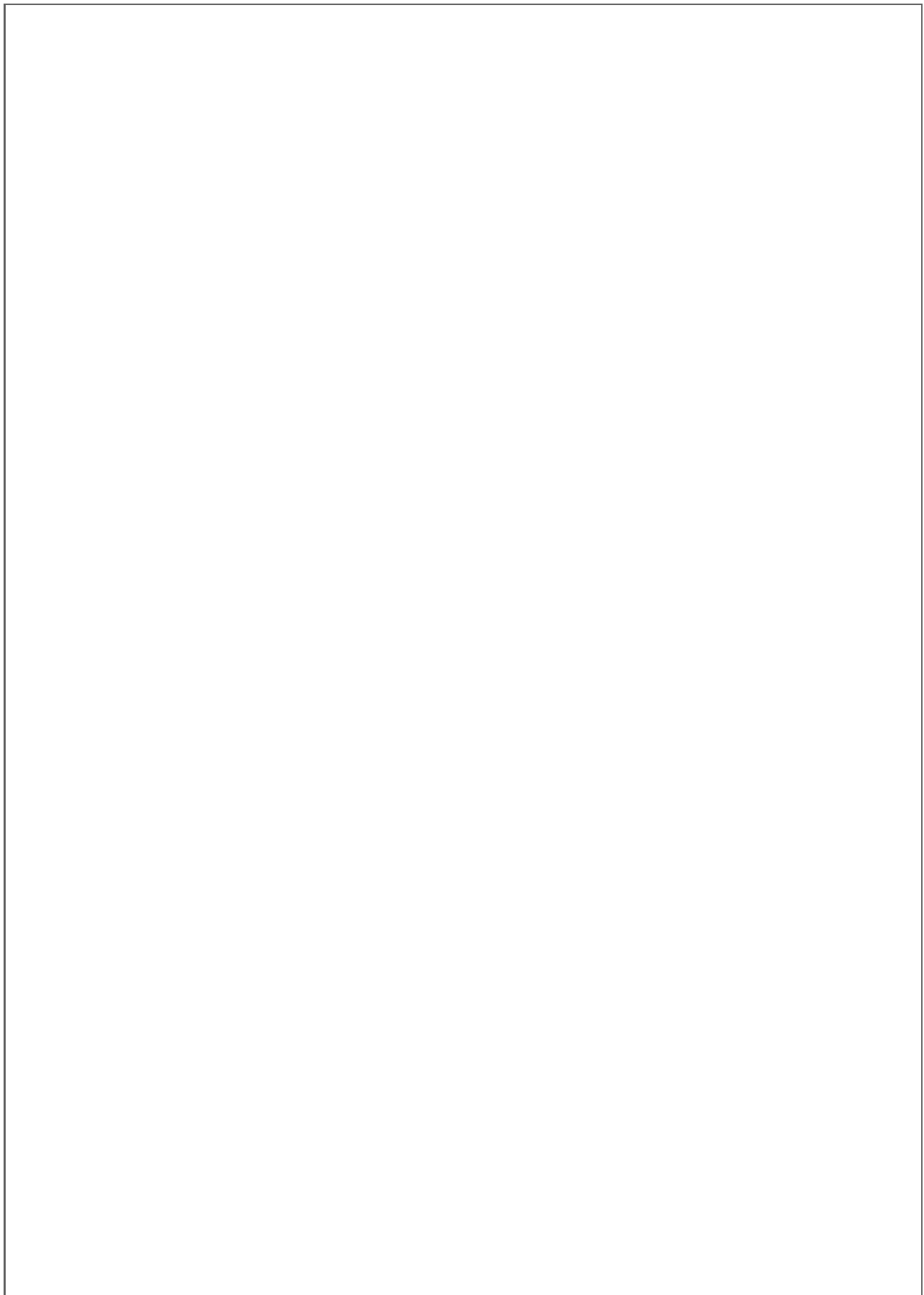
| Type of data* | length frequency distribution and catches:effort data | Data source* | Commercial landings |
|---|---|---|---|
| Method of assessment* | LCA and YR | Software used* | VITwin4 (Lleonart et Salat, 2000) |

## Sheets filled out

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

## Comments, bibliography, etc.

Lleonart J., Salat J., 2000. VIT win4 version 1.2.Software for fisheries analysis. Institut Ciènces del Mar (CSIC). Fao, Barcelona.

**Comments, bibliography, etc.**

**Code: DPS0411AIN**

## Biology

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

| Sex | Fem | Mal | Both | Unsexed | | |
|---|---|---|---|---|---|---|
| Maximum size observed | 41 | 35 | | | Reproduction season | |
| Size at first maturity | 19 | | | | Reproduction areas | |
| Recruitment size | | | | | Nursery areas | |

## Parameters used (state units and information sources)

| | | Units | Sex | | | |
|---|---|---|---|---|---|---|
| | | | female | male | both | unsexed |
| Growth model | L∞ | mm | 42.6 | 36.8 | | |
| | K | year | 0.59 | 0.58 | | |
| | t0 | | -0.08 | -0.09 | | |
| | Data source | | | | | |
| Length weight relationship | a | | 0.00033 | 0.0004 | | |
| | b | | 2.181 | 2.096 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| M | | | 0.819 | 0.819 | | |

| sex ratio (mal/fem) | 45.94-54.06 |
|---|---|

## Comments

**Comments**

**Code: DPS0411AIN**

| Data source* | CNRDPA and MPRH (MINISTERE DE LA PECHE ET DES RESSOURCES HALIEUTIQUES) | Year (s)* | 2010 |
|---|---|---|---|
| Data aggregation (by year, average figures between years, etc.)* | Year | | |

## Fleet and catches (please state units)

| | Country | GSA | Fleet Segment | Fishing Gear Class | Group of Target Species | Species |
|---|---|---|---|---|---|---|
| Operational Unit 1* | DZA | 04 | E - Trawl (12-24 metres) | 03 - Trawls | 33 - Demersal shelf 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 |
|---|---|---|---|---|---|---|---|
| **DZA 04 E 03 33 - DPS** | 358 | Tons | 719 | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Total | 358 | | 719 | | | | |

| Legal minimum size | 20 mm |
|---|---|

## Comments

**Comments**

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| Data source* | | OpUnit 1* | DZA 04 E 03 33 - DPS |
|---|---|---|---|

## Time series

| Year* | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|---|
| Catch | 1653.6 | 1383.9 | 1134 | 1151.7 | 849.54 | 638.49 |
| Minimum size | | | | | | |
| Average size Lc | | | | | | |
| Maximum size | | | | | | |
| Fleet | 352 | 354 | 356 | 403 | 435 | 476 |

| Year | 2008 | 2009 | 2010 | | | |
|---|---|---|---|---|---|---|
| Catch | 760 | 1204 | 719 | | | |
| Minimum size | | | 15 | | | |
| Average size Lc | | | 25.27 | | | |
| Maximum size | | | 41 | | | |
| Fleet | 427 | 458 | 358 | | | |

## Selectivity          Remarks

| L25 | |
|---|---|
| L50 | |
| L75 | |
| Selection factor | |
| | |

## Structure by size or age

In Algeria, the sizes of the Deep water pink shrimp ranges from 13 to 41 mm in cephalothoracique length, with an average of catch size about 25.27 mm.
Minimum legal size of Parapenaeus longirostris is set to 20 mm cephalothoracique length. Sex ratio is slightly in favor of females (54.06%). Landings are made in 32 fishing ports. In terms of regulation, namely in Algeria trawling is prohibited from 0-50 meters deep.

In 2009, the deep-water pink shrimp catches are estimated at around 1204 tons while the following year the production decreased (719 tons). CPUE showed a slight decline between 2009 and 2010 when the catch per unit effort decreased from near 3 kg/vessel to 2kg/vessel. In 2010, 358 trawlers worked in total with the following average characteristics: 19 meters length, 449 hp boat power and tonnage of 45 GRT..

**Structure by size or age**

Zone de groupe 28

| Size | female | males |
|------|--------|-------|
| 15-16 | 8 | 4 |
| 16-17 | 1 | 4 |
| 17-18 | 4 | 8 |
| 18-19 | 1 | 40 |
| 19-20 | 12 | 176 |
| 20-21 | 12 | 444 |
| 21-22 | 68 | 456 |
| 22-23 | 140 | 272 |
| 23-24 | 200 | 88 |
| 24-25 | 264 | 64 |
| 25-26 | 288 | 64 |
| 26-27 | 124 | 52 |
| 27-28 | 52 | 40 |
| 28-29 | 108 | 32 |
| 29-30 | 120 | 20 |
| 30-31 | 132 | 20 |
| 31-32 | 144 | 16 |
| 32-33 | 160 | 4 |
| 33-34 | 76 | 4 |
| 34-35 | 76 | 4 |
| 35-36 | 40 | 0 |
| 36-37 | 32 | 0 |
| 37-38 | 20 | 0 |
| 38-39 | 16 | 0 |
| 39-40 | 16 | 0 |
| 40-41 | 12 | 0 |
| 41-42 | 4 | 0 |

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| Sex | female |
|---|---|

| Analysis # | |
|---|---|

| # of gears | trawl | Software | VIT win4 |
|---|---|---|---|

## Parameters used

| Vector F | |
|---|---|
| Vector M | |
| Vector N | |
| | |
| | |

## Model characteristics

In Algeria, a virtual population analysis of P. longirostris was carried out by separated sexes
based on the length (VPA) and conducted by the VIT program (Lleonart and Salat, 2000).

## Results

| | Total | Gear | | | |
|---|---|---|---|---|---|
| | | female | male | | |
| Current YR | | 0.139 | 0.127 | | |
| Maximum Y/R | | 0.188 | 0.148 | | |
| Y/R 0.1 | | 0.164 | 0.131 | | |
| $F_{max}$ | | 4 | 3.85 | | |
| $F_{0.1}$ | | 1.6 | 1.125 | | |
| Current B/R | | | | | |
| Maximum B/R | | | | | |
| B/R 0.1 | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

## Comments

both for female and male, the current YR is lower than the Y/R 0.1. considering F0.1 as target reference point (TRP), the stock appear fully exploited.
The effort must be maintained at the current level

## Comments
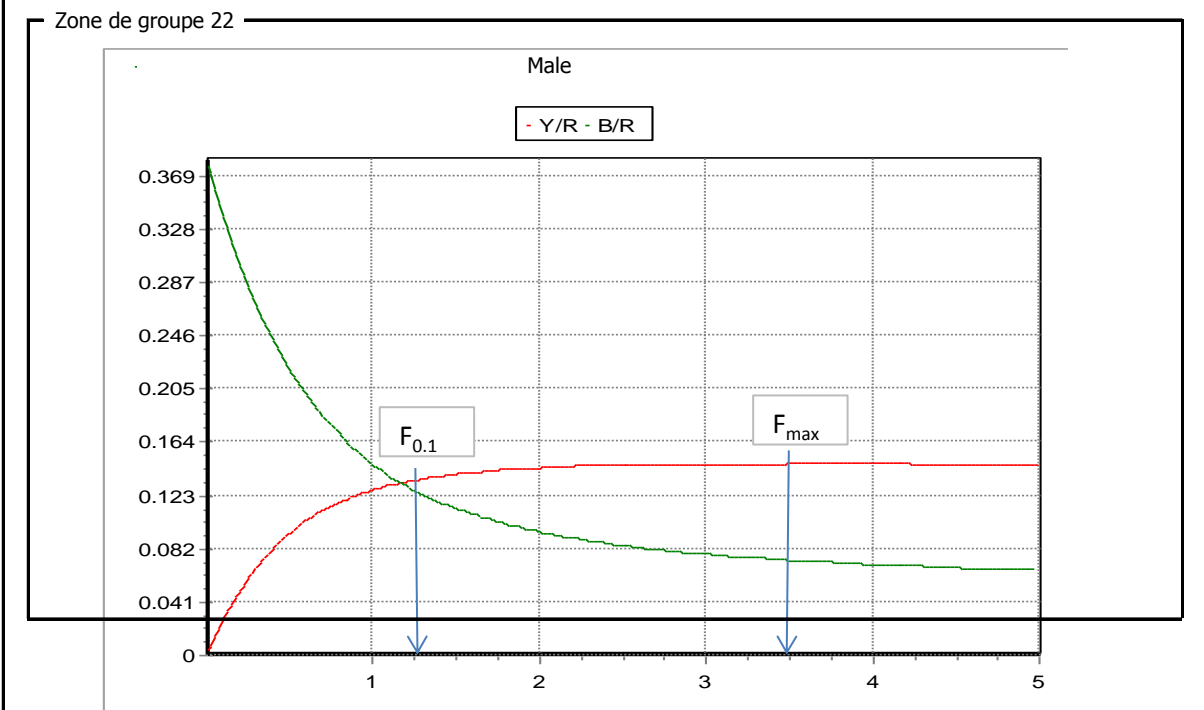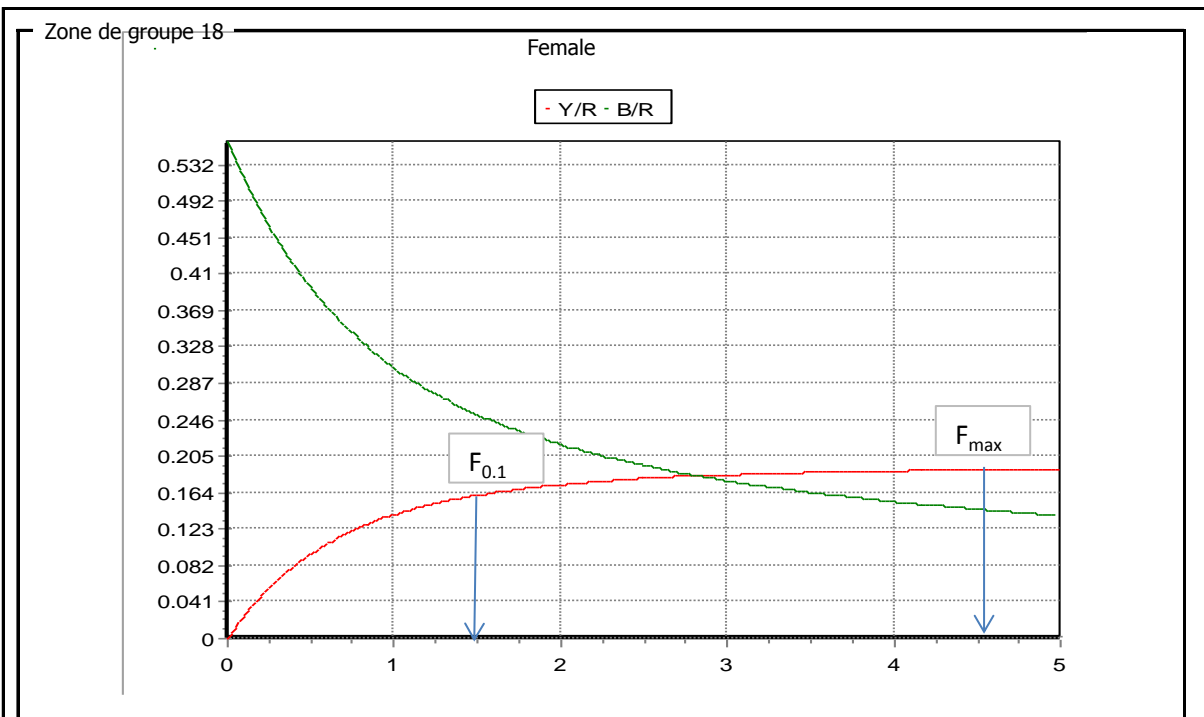
Zone de groupe 18

Female

Y/R · B/R



Zone de groupe 22

Male

Y/R · B/R

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## Indicators and reference points

| Criterion | Current value | Units | Reference Point | Trend | Comments |
|-----------|---------------|-------|-----------------|-------|----------|
| B | | | | | |
| SSB | | | | | |
| F | | | | | |
| 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; |
| | | |

| | Exploitation rate | Stock abundance | |
|---|---|---|---|
| **Bidimensional** | ○ No or low fishing | ○ Virgin or high abundance | ○ Depleted |
| | ⦿ Moderate fishing | ⦿ Intermediate abundance | ○ Uncertain / Not assessed |
| | ○ High fishing mortality | ○ Low abundance | |
| | ○ Uncertain / Not assessed | | |

**Comments**

**Comments**

**Code: DPS0411AIN**

## Management advice and recommendations*

In Algeria, a virtual population analysis of P. longirostris was carried out by separated sexes based on the length (VPA) and conducted by the VIT program (Lleonart and Salat, 2000), that allowed an assessment of the level of exploitation of the stock to an optimal level.
it is recomanded to maintain the fishing effort at the current level or at least to raise it at the F0.1 level this will not affect negativley the stock .

**Advice for scientific research***

# Abstract for SCSA reporting

**Authors**    AINOUCHE Nawel      **Year**    **2011**

**Species Scientific name**    Parapenaeus longirostris   -   DPS

           Source:    GFCM Priority Species

           Source:   -

           Source:   -

**Geographical Sub-Area**    04  -  Algeria

**Fisheries (brief description of the fishery)***

The main species of fish caught by the algerian trawlers are essentially Red mullet Mullus barbatus, Pagellus erythrinus, Pagellus acarne , Pagellus bogaraveo , Merluccius merluccius and Phycis phycis. The Crustacean Decapods are represented by the two shrimps of high commercial interest : the red shrimp Aristeus antennatus (Risso, on 1816) and the pink shrimp Parapenaeus longirostris (Lucas, 1846) . The other species belonging to the group of Reptentia are weakly represented in the contributions, in spite of their high price on the local market such as Nephrops norvegicus (Linnaeus, on 1758) as well as the spiny lobster Palinurus elephas (Fabricius, 1787). The demersal species with great commercial interest in Algeria are Aristeus antennatus and Parapenaeus longirostris, moreover P. longirostris is the main commercial species in 19 Algerian fishing ports. Parapenaeus longirostris is present throughout the Algerian coast from east to west. Sizes range from 13 to 41 mm in cephalothorax length, with an average catch of 25.27mm. The minimum size of the deep-water pink shrimp is set to 20 mm cephalothorax length. Sex ratio is slightly in favor of females (54.06%). Landings are made in 32 fishing ports. In terms of regulation, namely in Algeria trawling is prohibited from 0-50 meters deep. In 2009, the deep-water pink shrimp catches are estimated at around 1204 tons while the following year the production decreased (719 tons). CPUE showed a slight decline between 2009 and 2010

**Source of management advice\***

**(brief description of material -data- and methods used for the assessment)**

Data of total catch and fishing effort in 2000-2010 of the Algerian trawling fleet in GSA04 were presented. Abundance based on survey data, biological parameters, landings and samplings in 2010 were presented confirming that with a similar fishing effort there was a great decrease in P. longirostris landings from 2002 to 2010

**Stock Status\***

F - Fully exploited. The fishery is operating at or close to an optimal yield level, with no expected room for further expansion;

**Exploitation rate**

Moderate fishing mortality

**Stock abundance**

Intermediate abundance

**Comments**

**Management advice and recommendations***

**Advice for scientific research\***