

SAC GFCM Sub-Committee on Stock Assessment

Date*

1	November	2011
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Code*

PAC2611*EI

Authors*

*El-hawet A.A.K., **El-ganainy A.A. and **Mahmoud H.H

Affiliation*

*Arab academy of science and tecnology, Egypt. **National institute of oceanography and fisheries, Egypt.
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Species Scientific name*

1	<i>Pagellus erythrinus</i> - PAC Source: GFCM Priority Species
2	Source: -
3	Source: -

Geographical area*

Egypt

Geographical Sub-Area (GSA)*

26 - South Levant

Combination of GSAs

1	
2	
3	

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

Assessment form

Sheet #0
Basic data on the assessment

Code: PAC2611*EI

Date*	1	Nov	2011	Authors*	*El-haweet A.A.K., **El-ganainy A.A. and **Mahmoud H.H
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Species Scientific name*	Pagellus erythrinus - PAC	Species common name*	Common pandora
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Data Source

GSA*	26 - South Levant	Period of time*	two years
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Description of the analysis

Type of data*	Length frequency data	Data source*	Commercial catch in Port-Saaid area.
Method of assessment*	Yeild per recruit model and relative Y/R and B/R (knife edge selection) estimation of the biological ref. points	Software used*	FiSAT software

Sheets filled out

B	P1	P2a	P2b	G	A1	A2	A3	Y	Other	D	Z	C
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Comments, bibliography, etc.

-Al-Zahaby, A.S., Wadie W.F., El-Serafy S.S. and Rizkalla S.I. (1996):
Age and growth of red Pandora fish *Pagellus erythrinus* (Family: Sparidae) in the Egyptian Mediterranean waters.

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Differences in growth of common pandora, *pagellus erythrinus* (L., 1758) (pisces: sparidae), caught by different fishing gears in the strait of sicily.

-Gancitano, V., C. Badalucco, S. Cusumano, S. Gancitano, G. Garofalo, P. Rizzo, G. Sieli, F. Fiorentino (2011):
Age cohort analysis of common pandora, *Pagellus erythrinus*, (L., 1758) (pisces: sparidae) In the strait of sicily.

Comments, bibliography, etc.

- Ghorbel, M. and A. Bouain (1990):
Âge et croissance du pageot commun *Pagellus erythrinus* du golfe de Gabès - Tunisie., Bull. Inst. natl. scient. tech. Océanogr. Pêche Salammbô 17:17-32.
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Some parameters about population biology of the common pandora (*Pagellus erythrinus* L., 1758) (Sparidae) in the Edremit Bay (Turkey)., *E.U. Journal of Fisheries & Aquatic Sciences*, 20(3-4):329-336.
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- Rijavec, L. (1975):
Biology and dynamics of *Pagellus erythrinus* (L.) in the Boka Kotorska Bay and off the coast of Montenegro., *Studia Marina* 8:3-109.
- Somarakis, S. and A. Machias (2002):
Age, growth and bathymetric distribution of red pandora (*Pagellus erythrinus*) on the Cretan shelf (eastern Mediterranean)., *J. Mar. Biol. Assoc. U.K.* 82(1):149-160.
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Biology and population dynamics of *Pagellus erythrinus* in the insular zone of the middle Adriatic., *Acta Adriat.*, 21(2):203-226.

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Assessment form

Sheet B
Biology of the species

Code: PAC2611*EI

Biology

Somatic magnitude measured (LH, LC, etc)*					Units*	
Sex	Fem	Mal	Both	Unsexed		
Maximum size observed				27.5	Reproduction season	
Size at first maturity					Reproduction areas	
Recruitment size					Nursery areas	

Parameters used (state units and information sources)

		Units	Sex			
			female	male	both	unsexed
Growth model	L _∞	cm				42.143
	K					0.1561
	t0					-0.892
	Data source	Trawl survey				
Length weight relationship	a					0.014
	b					2.975
	M					0.436
	sex ratio (mal/fem)					

Comments

The length frequency was analyzed by Bhattacharya method in order to estimate the age composition and then Von Bertalanffy parameters.

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Assessment form

Sheet P1

General information about the fishery

Code: PAC2611*EI

Data source*	Commercial catch in Port-Saaid area.	Year (s)*	2006-2007
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Data aggregation (by year, average figures between years, etc.)*	Monthly basis
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Fleet and catches (please state units)

	Country	GSA	Fleet Segment	Fishing Gear Class	Group of Target Species	Species
Operational Unit 1*	EGY	26	F - Trawl (>24 metres)	03 - Trawls	33 - Demersal shelf species	PAC
Operational Unit 2						
Operational Unit 3						
Operational Unit 4						
Operational Unit 5						

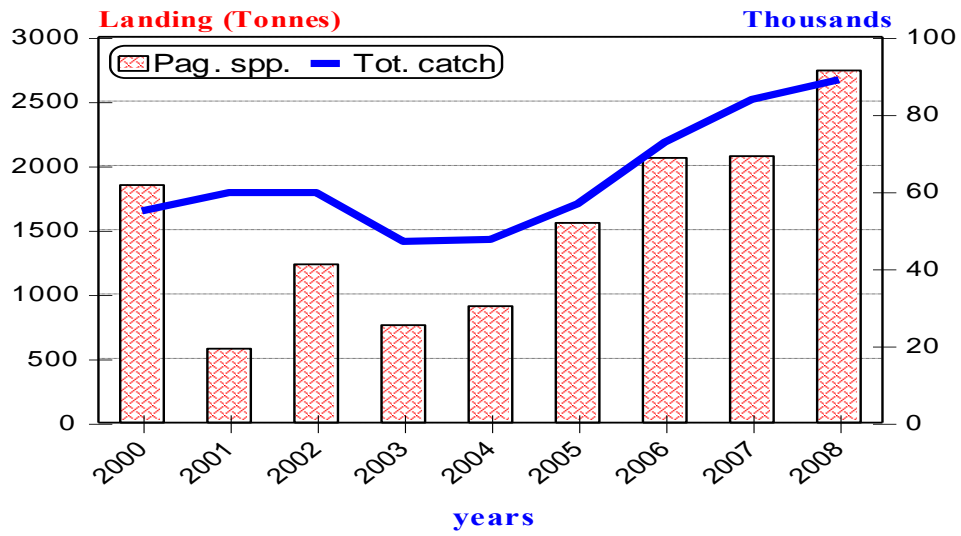
Operational Units*	Fleet (n° of boats)*	Kilos or Tons	Catch (species assessed)	Other species caught	Discards (species assessed)	Discards (other species caught)	Effort units
EGY 26 F 03 33 - PAC							
Total							

Legal minimum size	
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Comments

Genus *Pagellus* is represented in the Egyptian Mediterranean waters by two species: *Pagellus erythrinus* (red or common pandora) and *Pagellus acarne* (axillary sea bream). Both species are usually found with *Pagrus* species in the catch and all are landed under one category. *Pagellus erythrinus* consider by about 60% of this category. The trawl fishery exploits the common Pandora with 22-30 mm diamond mesh size codend, thus the catches included small size specimens.

Comments



The landed catch of Pagellus and the total landed catch of the Egyptian Mediterranean coast in the years from 2000 to 2008.

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Assessment form

Sheet P2a
Fishery by Operational Unit

Code: PAC2611*EI

Page 1 / 1

Data source*	Commercial catch in Port-Saaid area.	OpUnit 1*	EGY:26 F:03:33 - PAC
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Time series

Year*	2006-2007					
Catch						
Minimum size	7.5					
Average size Lc	15.59					
Maximum size	27.5					
Fleet						

Year						
Catch						
Minimum size						
Average size Lc						
Maximum size						
Fleet						

Selectivity

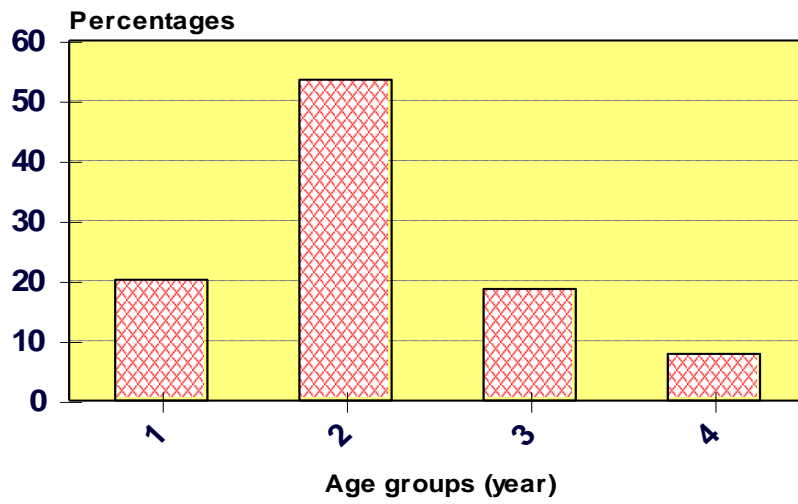
Remarks

L25		
L50		
L75		
Selection factor		

Structure by size or age

The fish samples represented by four age groups , the dominant age group is age group II by about 53.46% followed by age group I which represented by about 20.13%, age group III 18.61% and age group IV by about 7.79%.

Structure by size or age



Age composition of *Pagellus erythrinus* in Port-Saaid area.

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Assessment form

Sheet P2b
Fishery by Operational Unit

Code: PAC2611*EI

Page 1 / 1

Data source* Commercial catch in Port-Saaid area.

OpUnit 1*

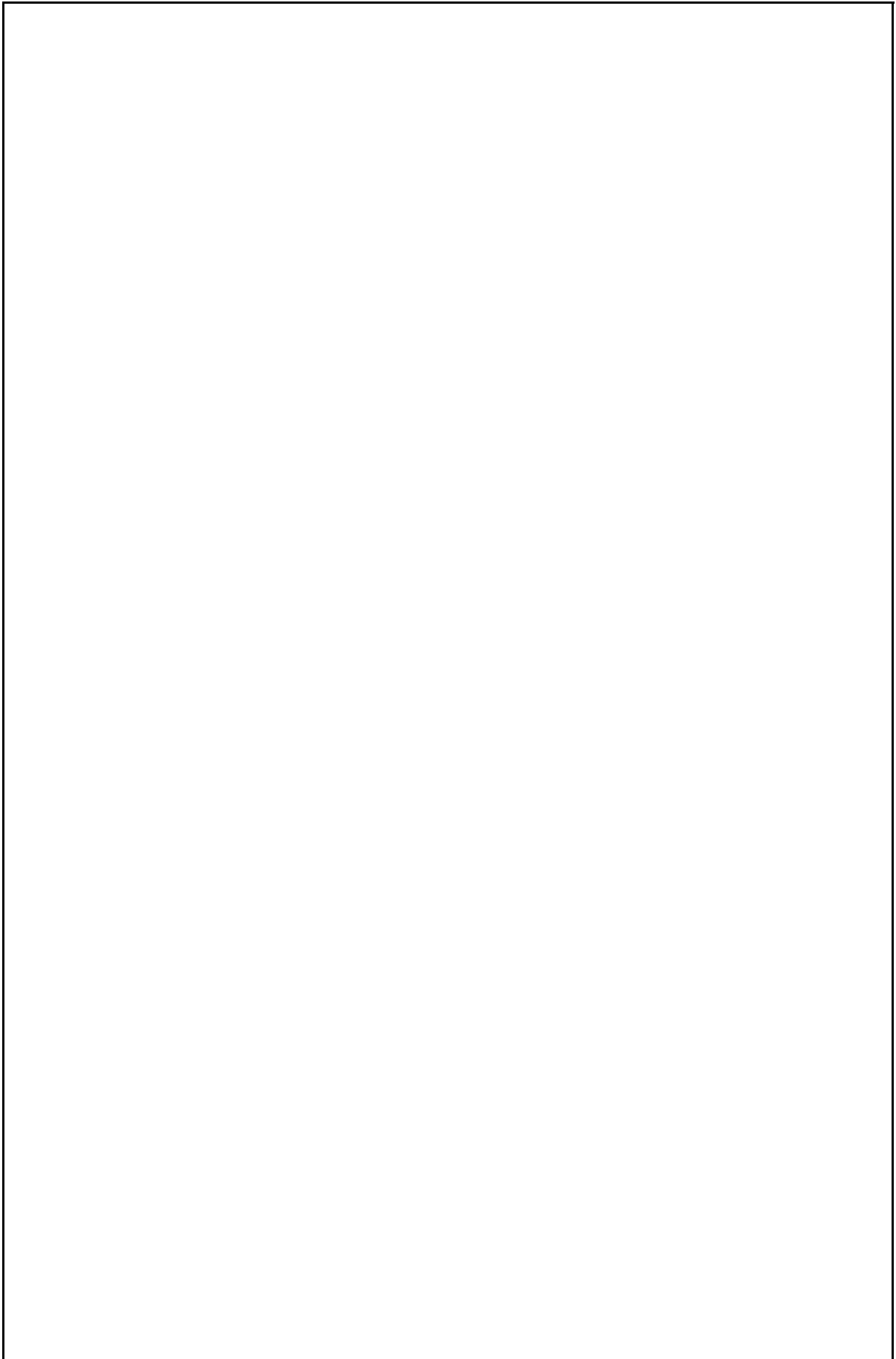
EGY 26 F 03 33 - PAC

Regulations in force and degree of observance of regulations

closed season during May and June since 2007.

Accompanying species

Penaeus semisulcatus, Metapenaeus stebbingi, Sepia officinalis, Mullus surmuletus and Saurida undosquamis



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Assessment form

Sheet G
Indirect methods. Global model

Code: PAC2611*EI

Analysis #*

Page 1 /

Data source*	Commercial catch in Port-Saaid area.	Gear*	Trawl
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Model characteristic

Type of model*	Analytical model	Fitting criterion	
Software	FiSAT	Bibliographical source	

Data

Year	2006-2007						
Catch							
Effort							
CPUE							

Year							
Catch							
Effort							
CPUE							

Adjustment

RMS	<input style="width: 95%;" type="text"/>
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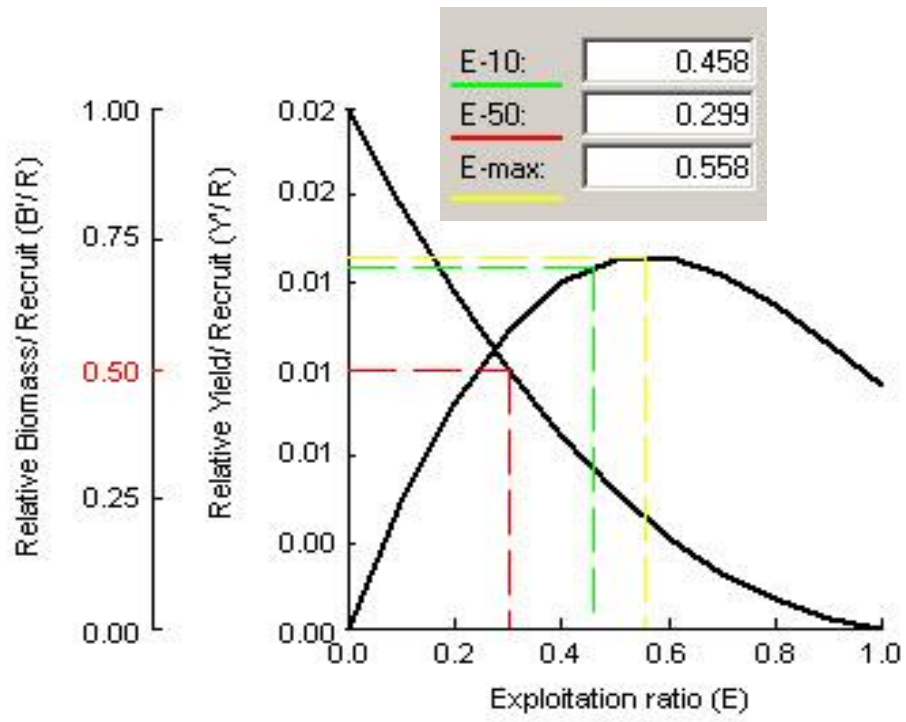
Results

Carryng capacity		a	0.014
Growth rate		b	2.975
Catchability			
MSY			
EMSY	0.558	TACMSY	
E0.1	0.458	TAC0.1	
Ecurrent	0.624		

Comments

The curent exploitation ratio is more than E max and E0.1.

Comments



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Assessment form

Sheet A1
Indirect methods: VPA, LCA

Code: PAC2611*EI

Page 1 /

Sex*

Analysis # *

Time series

Data	Size	Age
(mark with X)	x	

Model	Cohorts	Pseudocohorts
(mark with X)	x	

Equation used	Yield per recruit equation	Tuning method	
# of gears	Trawl	Software	FiSAT
F _{terminal}	0.724		

Population results (please state units)

	Sizes	Ages		Amount	Biomass
Minimum	7.5		Recruitment		
Average	15.59		Average population		
Maximum	27.5		Virgin population		
Critical			Turnover		

Average mortality

	Total	Gear				
F ₁	0.724					
F ₂						
Z	1.16					

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

Comments

F_{cur} = 0.724, F_{max} = 0.536 and F_{0.1} = 0.275

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Assessment form

Sheet A2
Indirect methods: data

Code: PAC2611*EI

Sex*	combined	Gear*	Trawl	Analysis # *	
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Data source	Length frequency data
-------------	-----------------------

Data

L. interval (cm)	Mid. L. (cm)	commercial
7 - 8	7.5	0.44
8 - 9	8.5	1.78
9 - 10	9.5	4.00
10 - 11	10.5	5.33
11 - 12	11.5	5.11
12 - 13	12.5	6.22
13 - 14	13.5	8.00
14 - 15	14.5	12.00
15 - 16	15.5	12.44
16 - 17	16.5	9.78
17 - 18	17.5	8.22
18 - 19	18.5	6.22
19 - 20	19.5	6.44
20 - 21	20.5	3.56
21 - 22	21.5	3.33
22 - 23	22.5	3.33
23 - 24	23.5	1.56
24 - 25	24.5	0.67
25 - 26	25.5	0.67
26 - 27	26.5	0.44
27 - 28	27.5	0.44

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Assessment form

Sheet A3
Indirect methods: VPA results

Code: PAC2611*EI

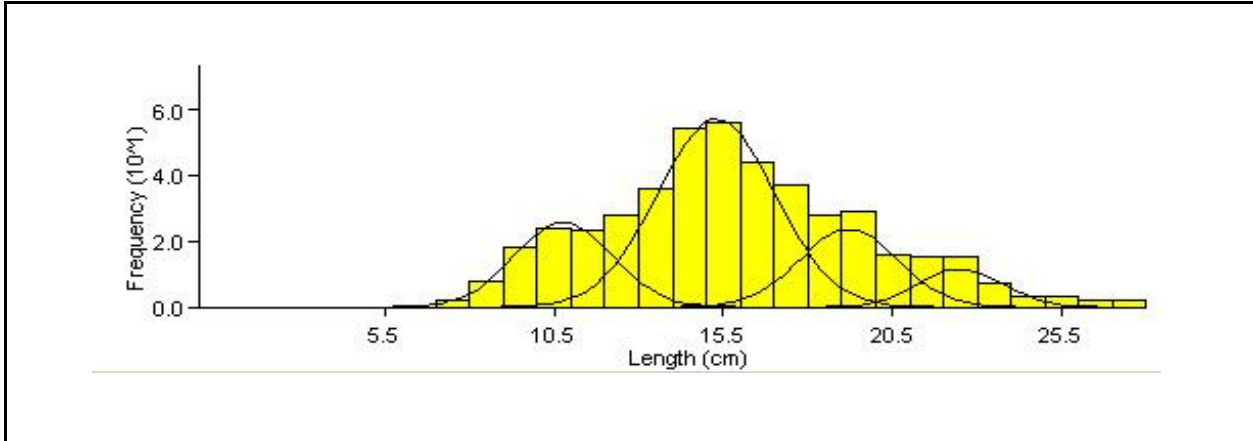
Page 1 /

Sex*

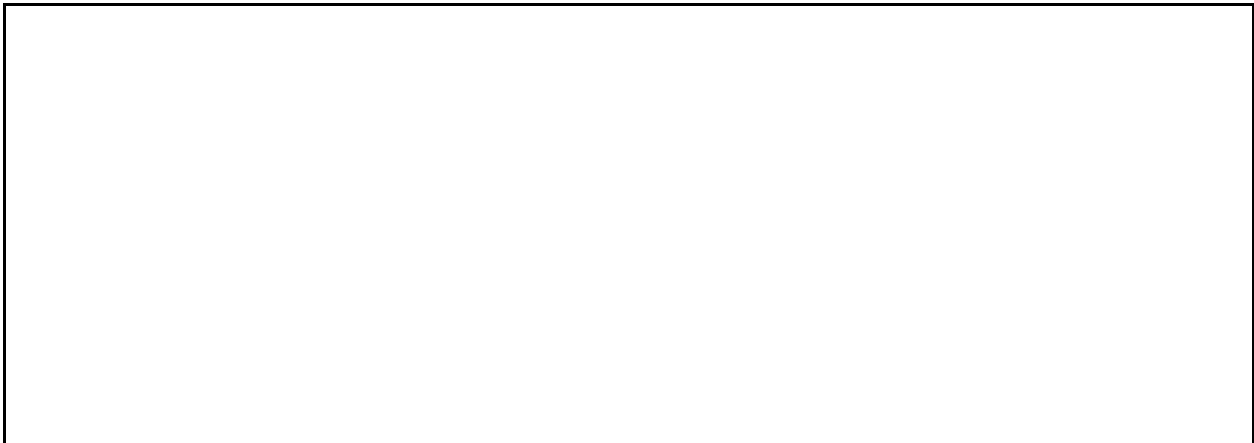
Gear*

Analysis #*

Population in figures



Population in biomass



Fishing mortality rates

$F_{cur} = 0.724$, $F_{max} = 0.536$ and $F_{0.1} = 0.275$

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Assessment form

Sheet Y
Indirect methods: Y/R

Code: PAC2611*EI

Sex

Analysis #

# of gears	trawl	Software	FiSAT
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Parameters used

Vector F	
Vector M	
Vector N	

Model characteristics

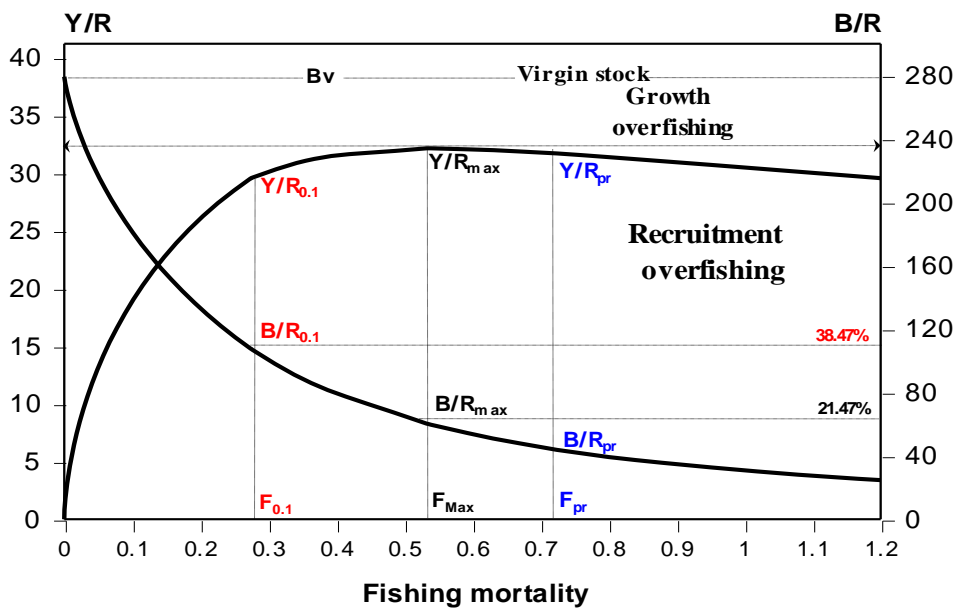
Total mortality was estimated by the length converted catch curve and natural mortality was estimated by the Pauly equation. Beverton and Holt yield per recruit model and relative yield per recruit analysis (knife edge selection) were performed with FiSAT software, in order to estimate also the reference points.

Results

	Total	Gear			
Current YR	31.6925				
Maximum Y/R	32.1378				
Y/R 0.1	29.5447				
F _{max}	0.536				
F _{0.1}	0.275				
Current B/R	59.96				
Maximum B/R	279.24				
B/R 0.1	107.44				

Comments

Comments



Yield per recruit and biomass per recruit curves of *P. erythrinus* in Port-Saaid area.

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Assessment form

Sheet D
Diagnosis

Code: PAC2611*EI

Indicators and reference points

Criterion	Current value	Units	Reference Point	Trend	Comments
B					
SSB					
F	0.724		0.275		
Y					
CPUE					

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

Unidimensional	<input type="radio"/>	? - (or blank) Not known or uncertain. Not much information is available to make a judgment;
	<input type="radio"/>	U - Underexploited, undeveloped or new fishery. Believed to have a significant potential for expansion in total production;
	<input type="radio"/>	M - Moderately exploited, exploited with a low level of fishing effort. Believed to have some limited potential for expansion in total production;
	<input type="radio"/>	F - Fully exploited. The fishery is operating at or close to an optimal yield level, with no expected room for further expansion;
	<input checked="" type="radio"/>	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;
	<input type="radio"/>	D - Depleted. Catches are well below historical levels, irrespective of the amount of fishing effort exerted;
	<input type="radio"/>	R - Recovering. Catches are again increasing after having been depleted or a collapse from a previous;

Bidimensional	Exploitation rate		Stock abundance	
	<input type="radio"/>	No or low fishing	<input type="radio"/>	Virgin or high abundance
	<input type="radio"/>	Moderate fishing	<input checked="" type="radio"/>	Intermediate abundance
	<input checked="" type="radio"/>	High fishing mortality	<input type="radio"/>	Low abundance
	<input type="radio"/>	Uncertain / Not assessed	<input type="radio"/>	Depleted
			<input type="radio"/>	Uncertain / Not assessed

Comments

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Assessment form

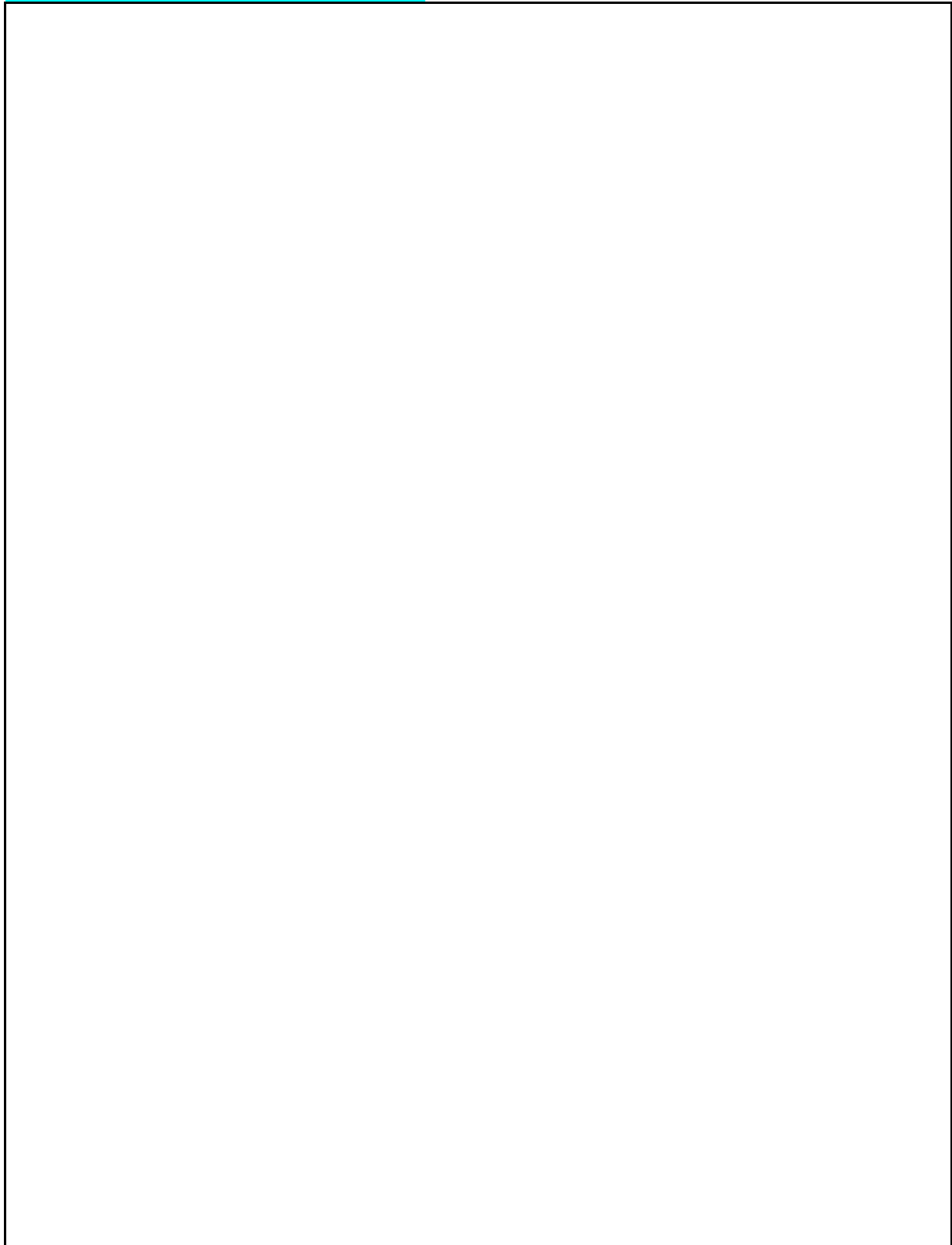
Sheet Z
Objectives and recommendations

Code: PAC2611*EI

Management advice and recommendations*

improvement of the trawl exploitation pattern (40 mm square mesh size or 50 mm diamond mesh size) and reduction of fishing mortality up to 60% for Port-Saaid area to reach F0.1.

Advice for scientific research*



Abstract for SCSA reporting

Authors *El-haweet A.A.K., **El-ganainy A.A. and **Mahmoud H.H

Year 2011

Species Scientific name Pagellus erythrinus - PAC

Source: GFCM Priority Species

Source: -

Source: -

Geographical Sub-Area 26 - South Levant

Fisheries (brief description of the fishery)*

The main fishing ground used by the Egyptian fishing fleet is the continental shelf off the Nile delta. Recently the fleet also extended its activities to the Eastern side off Sinai and seasonally to the Western side of Alexandria. The region near the Nile delta has a large continental shelf which becomes progressively narrow on the western and eastern parts. Along the middle and eastern coast the seabed is flat with mostly muddy and sandy bottoms. On the western coast trawlable grounds are limited since the region is dominated by rocky bottoms. Apart from trawling inshore fisheries are very common, with a high number of artisanal fishers along the coast. There are ten fisheries centres along the coast with five developed fishing ports in Alexandria, Maaddia, Borollus, Damietta and Port Said

Source of management advice*

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

The main fishing ground used by the Egyptian fishing fleet is the continental shelf off the Nile delta. Recently the fleet also extended its activities to the Eastern side off Sinai and seasonally to the Western side of Alexandria. The region near the Nile delta has a large continental shelf which becomes progressively narrow on the western and eastern parts. Along the middle and eastern coast the seabed is flat with mostly muddy and sandy bottoms. On the western coast trawlable grounds are limited since the region is dominated by rocky bottoms. Apart from trawling inshore fisheries are very common, with a high number of artisanal fishers along the coast. There are ten fisheries centres along the coast with five developed fishing ports in Alexandria, Maaddia, Borollus, Damietta and Port Said

Stock Status*

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;

Exploitation rate

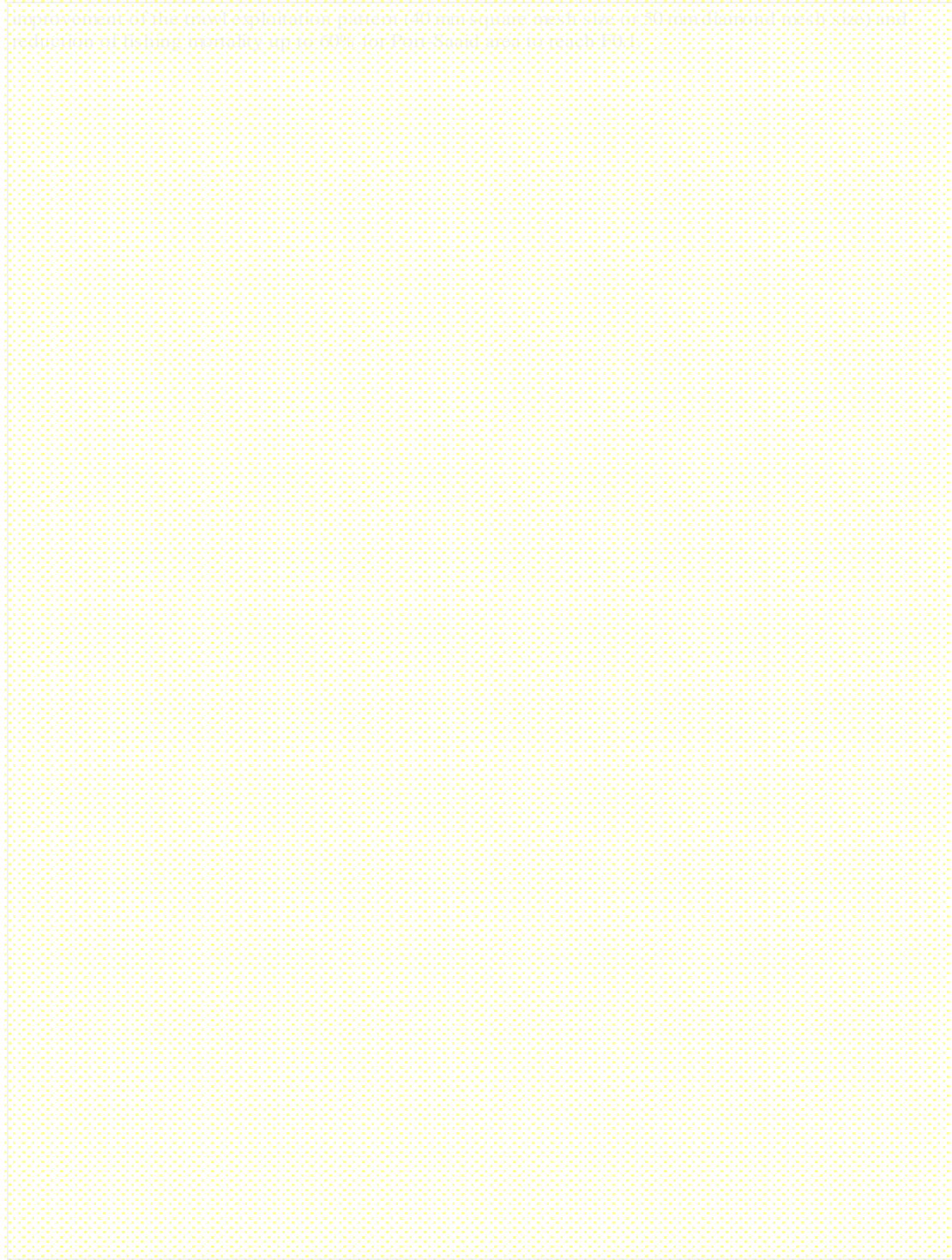
High fishing mortality

Stock abundance

Intermediate abundance

Comments

Management advice and recommendations*



Advice for scientific research*

