



Growth of the deep water rose shrimp *Parapenaeus longirostris* in Mauritanian waters (NW Africa)



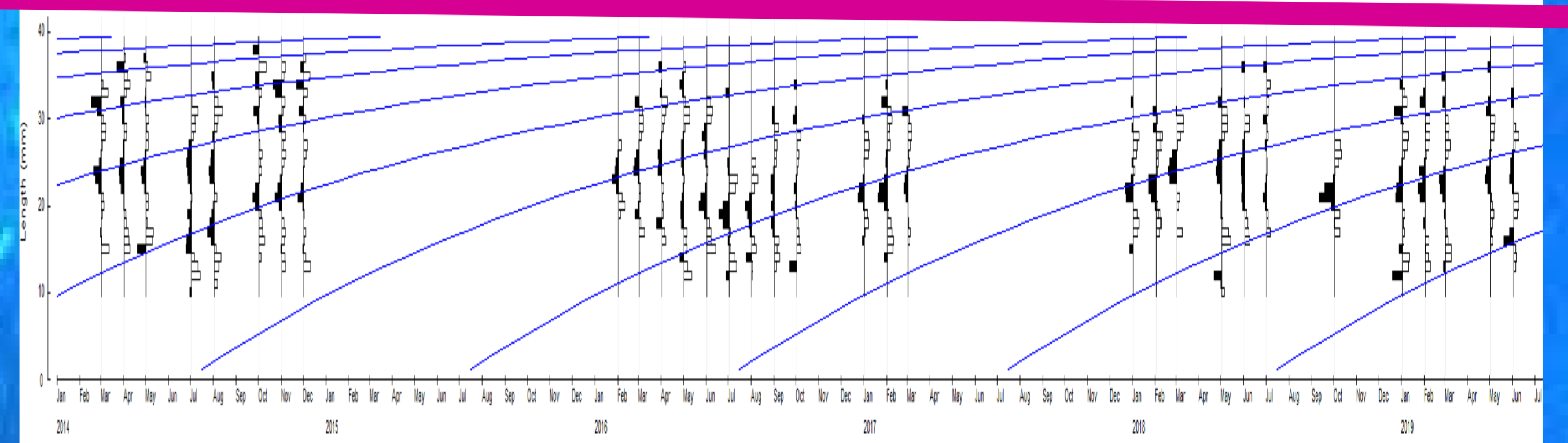
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INTRODUCTION

The deep water rose shrimp *Parapenaeus longirostris* is an epibenthic decapod crustacean with a wide geographical distribution from the eastern Atlantic to the Mediterranean Sea (Holthuis, 1987). It is the main target species of a Spanish fleet of shrimp bottom trawlers operating in the Mauritanian EEZ. The life history of this species is well known in north eastern Atlantic and Mediterranean waters, while the information is quite limited for the eastern central Atlantic.

For the study of the length-age relationship, the Von Bertalanffy Growth Function (VBGF) was fit to the monthly length distributions by using the Electronic Length Frequency Analysis I (ELEFAN I) routine included in FISAT II software (Gayaniilo et al., 2005). Length-frequency Distributions (LFD) for both sexes were used to estimate modal class values using the Bhattacharya method and the NORMSEP routine. Each well-separated modal component, with a separation index (SI) > 2, was assumed to be a single cohort. These analyses were carried out separately for males, females, and combined sexes

	Combined sexes	Males	Females
Mínimum length		10.5	11.6
Máximum length		30.5	39.2
CL ∞	41.74	32.24	41.67
k	0.51	0.51	0.84
Growth performance index	2.949		
Modal components		3	5



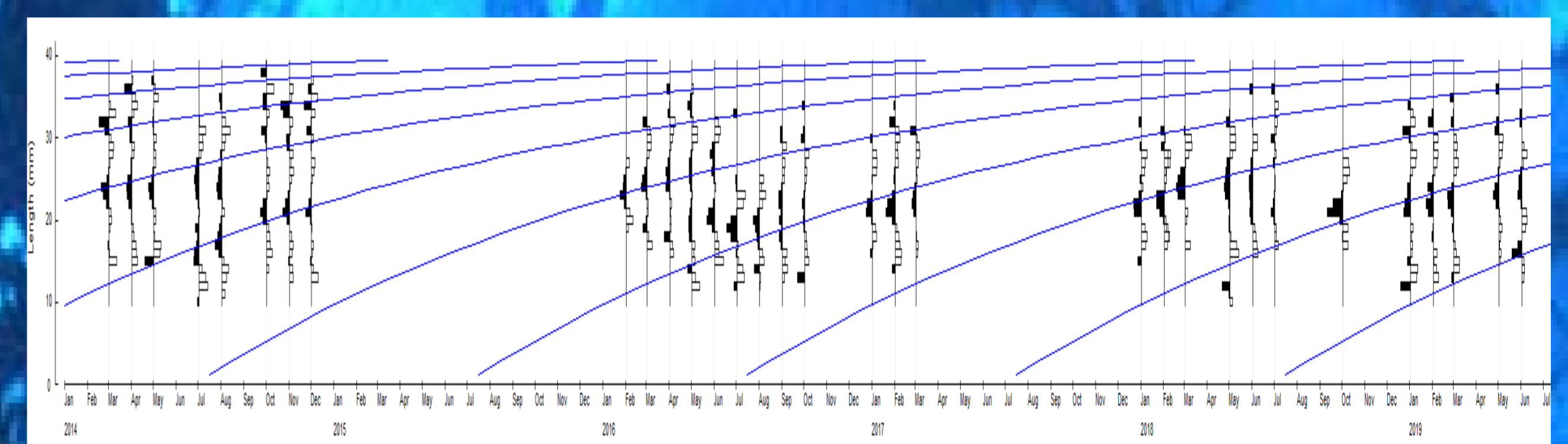
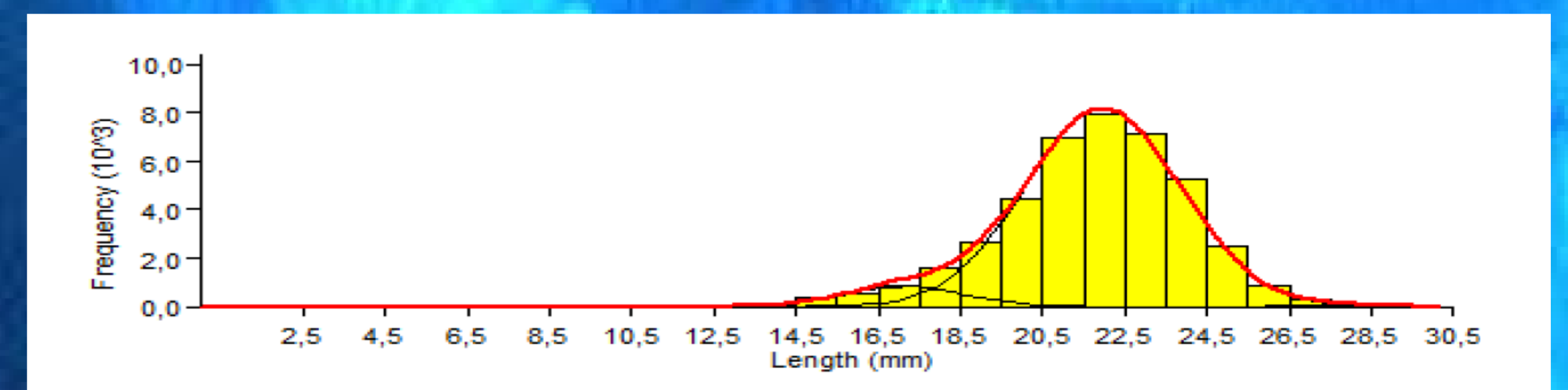
MATERIAL AND METHODS

Biological samplings of the species were conducted by scientific observers onboard this fleet, from catches obtained during 17 fishing trips performed between March 2014 and June 2019. The carapace lengths (CL) of 91662 specimens (54% females and 46% males) were grouped in 33 monthly length frequency distributions from March 2014 to June 2019.

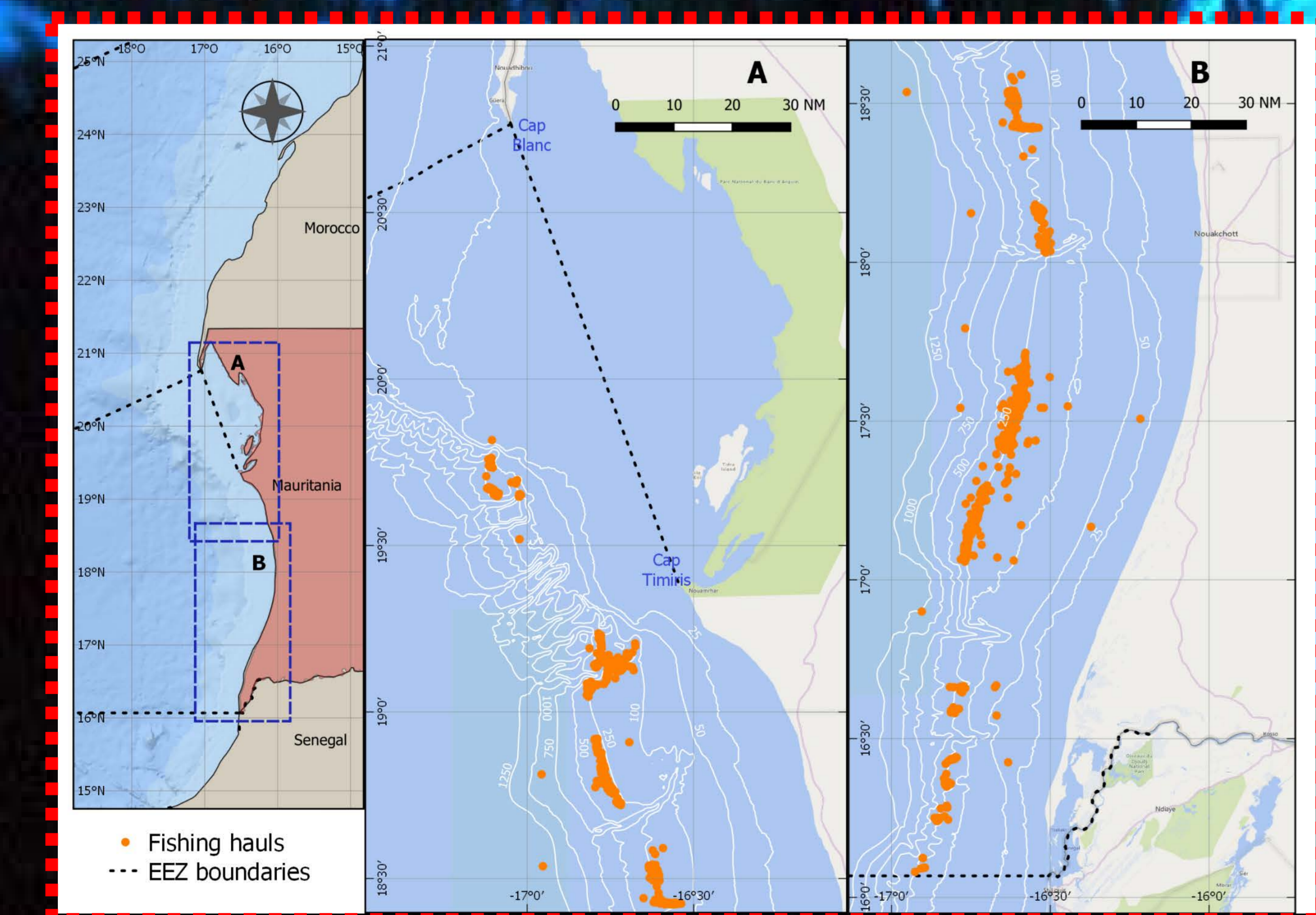
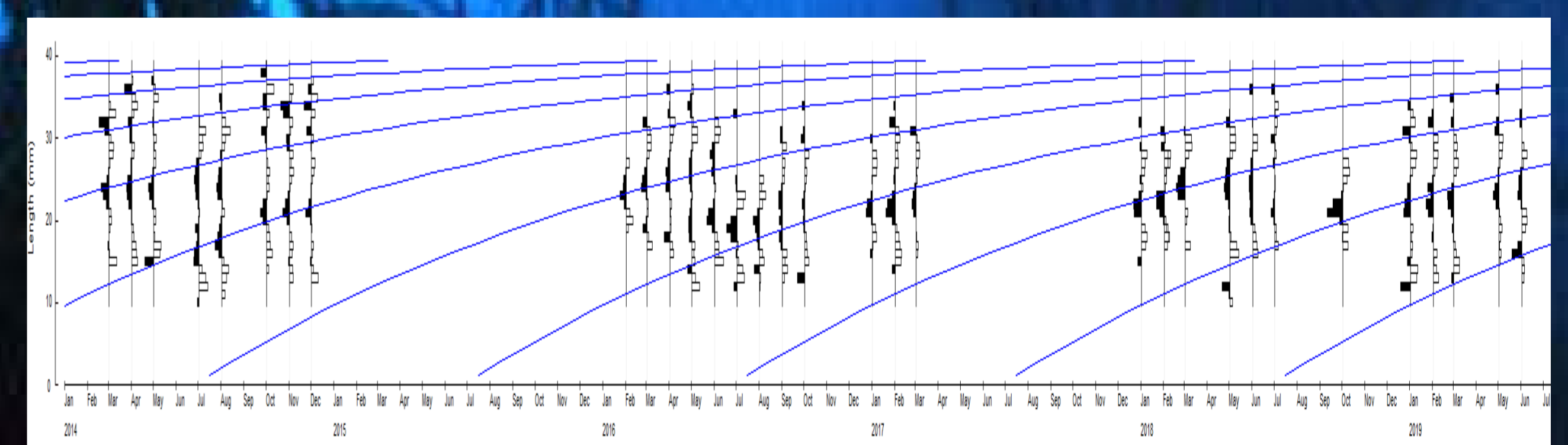
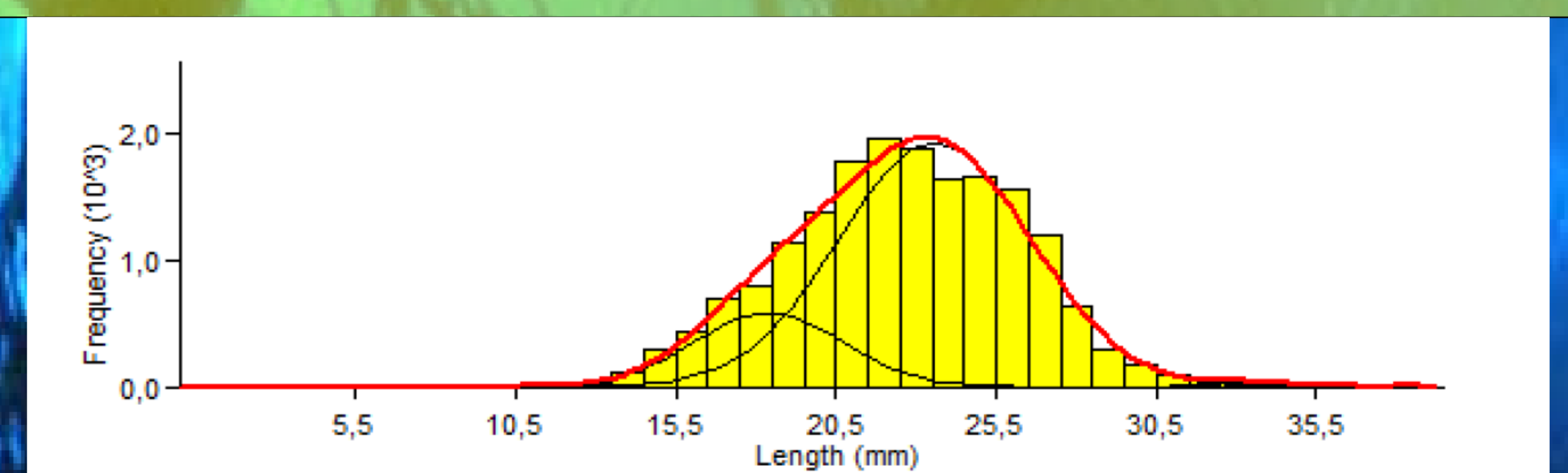
RESULTS

CL of females and males ranged from 11.6 to 39.2 mm and 10.5 to 30.5 mm, respectively. Three and five modal components (annual cohorts) were identified for females and males, respectively. The growth function estimated parameters were CL ∞ =41.74, k=0.51 for combined sexes, CL ∞ = 41.67, k= 0.51 for females and CL ∞ = 32.24, k=0.84 for males. Estimated growth performance indices were around 2.95 for combined sexes, females and males.

Computed Mean	S.D.	Population	S.I.
17,14	1,460	3031,81	n.a
21,97	1,960	38912,98	2,160
27,85	0,860	176,67	2,260



Computed Mean	S.D.	Population	S.I.
17,61	1,790	3306,28	n.a
23,49	2,770	14800,16	2,140
33,76	0,990	98,69	2,500
35,50	0,640	9,40	2,010
37,50	0,960	4,23	2,020



CONCLUSIONS

The estimated parameters may be used as input to test length-based methodologies for the assessment of this data-limited stock, for which only production models have been used so far.

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