



# ORIGIN OF *NOTOSCOPELUS KROEYERI* IN THE NORTHEAST ATLANTIC

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## ABSTRACT

The lanternfish *Notoscopelus kroeyeri* is widely distributed in the North Atlantic, being one of the most widespread lanternfish species inhabiting the mesopelagic community. The literature contains information on length distributions, feeding habits and some meristic characters from the Northeast (NEA) and the Northwest Atlantic (NWA). The aims of this study were to compare the *N. kroeyeri* from these wide areas on each side of the Mid Atlantic Ridge (MAR), and to test whether the samples within the NEA area, i.e. from the northern NEA (Norwegian and Faroese waters) and the southern NEA (Hatton Plateau and Porcupine Bank areas) have the same origin. The present study validates that *N. kroeyeri* from the NEA and NWA were significantly different. The *N. kroeyeri* from the NEA having fewer gillrakers (mean= 26.6) than those from the MAR (mean = 27.6) and NWA (mean= 28.5). It is concluded that the *N. kroeyeri* in Faroese and Norwegian waters are not different from *N. kroeyeri* from the Porcupine Bank and Hatton Plateau. The spawning ground has however not been located. From recent studies on water circulation changes in the North Atlantic it is possible that the lanternfish egg or fry could drift in high numbers from the west to east in corresponding to high water volume transport in some years.

### Keywords

Gillrakers; lanternfish; *Notoscopelus kroeyeri*; North Atlantic; Northeast; Northwest; Flemish Cap; Grand Bank; Hatton Plateau; Porcupine Bank; Faroese; Norwegian waters; Reykjanes Ridge

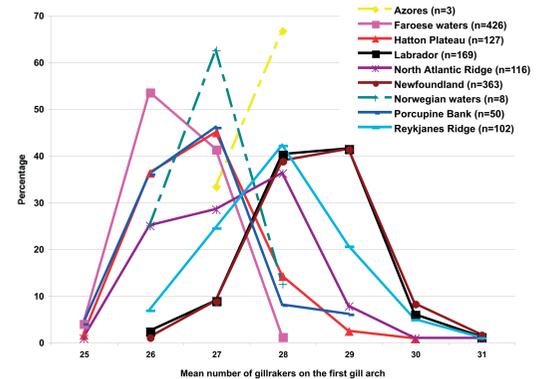
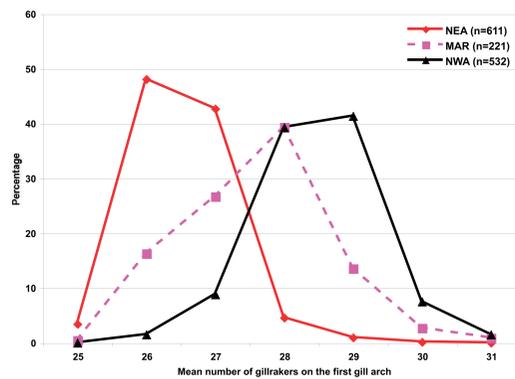
## INTRODUCTION

In the North Atlantic there are five species of genus *Notoscopelus* (Günther, 1864). *N. bolini* (Nafpaktitis, 1975), *N. caudispinosus* (Johnson, 1863), *N. elongatus* (Costa, 1844), *N. replendens* (Richardson, 1845), and *N. kroeyeri* (Malm, 1961). After being keyed to genus, the key to species is numbers of gillrakers and AO photophores (Nafpaktitis, 1975; Hulley, 1984). The otoliths also have distinctive character.

The lanternfish *N. kroeyeri* is widely distributed in the Northeastern Atlantic and Northwestern Atlantic, while the main habitats of the other species are farther south.

This study is a comparison of gillraker counts of *N. kroeyeri* from the Northeast- and Northwest Atlantic, to differentiate the species in the areas.

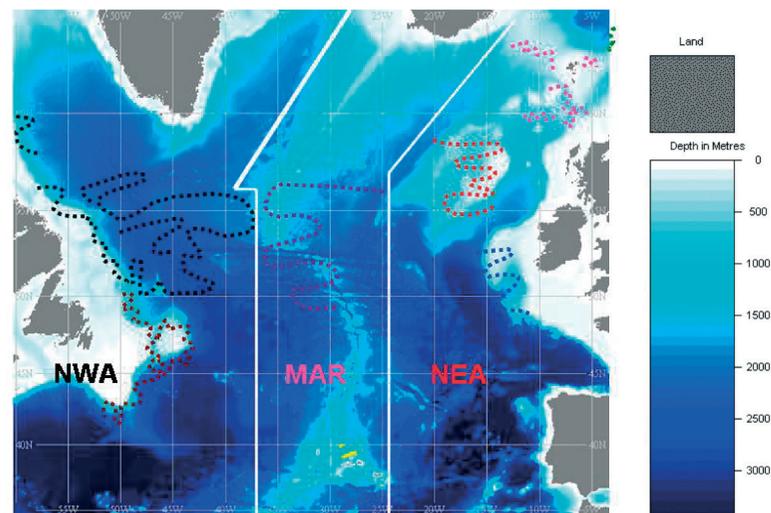
## RESULTS



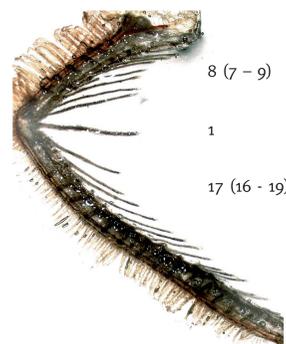
Areas (Figure to the left)	Areas (Figure to the right)									
	FW	HP	NW	PP	NAR	RR	AZ	NF	L	Mean
NEA (Faroese waters, Hatton Plateau, Norwegian waters, Porcupine bank)	26.4	26.8	26.9	26.8						26.5
MAR (North Atlantic Ridge, Reykjanes Ridge, Azores)					27.2	28.0	27.7			27.6
NWA (Newfoundland (Grand Bank and Flemish Cap), Labrador)								28.5	28.4	28.5

## MATERIALS AND METHODS

The *N. kroeyeri* specimens are collected by Faroese and Russian commercial and research vessels in the early 80's and later in 2004 through 2005. The commercial catch has been with 40 mm meshes in the codend, while the research vessels have had 12 mm in the codend or collecting bags.



Sampling areas



**GILLRAKER COUNTS**  
 Gillrakers on the first arch in *N. kroeyeri* should be 8 + 1 + 17 (18), total 26 (27) according to Hulley (1984).



The distinctive character of the otoliths were also used to determine the species

Upper limb of the gillraker	Lower limb of the gillraker				Total specimens
	16	17	18	19	
7		16 (3.8)	5 (1.2)		21 (4.9)
8	1 (0.2)	223 (52.4)	175 (41.1)	1 (0.2)	400 (93.9)
9		1 (0.2)	4 (0.9)		5 (1.2)
Total specimens	1 (0.2)	240 (56.3)	184 (43.2)	1 (0.2)	426 (100)

Above, an example of, the upper, lower and total gillrakers count are shown from Faroese waters. The numbers in parenthesis are percentage.

The total gillrakers numbers are used to compare the different areas.

### CITED REFERENCES ON THIS POSTER

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### ACKNOWLEDGEMENT

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