



Note on the Presence of the Crab *Callinectes Sapidus* Rathbun, 1896 on the African Atlantic Coast: Case of the Ramsar Ecological Site “ Merja Zerga”

Kaoutar L, Sayf EIB, Oussama B, Mohammed F* and Zouhair B

Mohammed V University, GEOPAC research center Rabat, Morocco

***Corresponding author:** Mohamed Fekhaoui, Mohammed V University, GEOPAC research center, Scientific Institute Av. Ibn Batouta, B.P 703, 10106 Rabat, Morocco, Email: Laglt.kaoutar@gmail.com

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Abstract

Following a scientific prospecting mission, a direct observation of the crab *Callinectes sapidus* Rathbun, 1896 was recorded. This observation confirms the expansion of this species in the Atlantic fringe, including the Merja Zerga Biological Reserve.

Keywords: *Callinectes Sapidus*; Invasive Species; Merja Zerga; Ramsar; Morocco

Introduction

In the current state, invasive alien species represent one of the greatest threats to biodiversity, and impact the socio-economic activities of populations adjacent to the areas of introduction. Among the countries covering a significant

presence of invasive species. Morocco hosts 102 invasive species (animal and plant) of which 34 are alien according to the Global Invasive Species Database [1]. The marine environment is no exception to this rule where invasive species in this biotope count a few individuals (Table 1).

Invasive species	Origins	Found on
<i>Asparagopsis armata</i> (Pacific seaweed)	Australia, Tasmania and New Zealand	The lagoon of Oualidia in 2012 [2]
<i>Codium fragile</i> (Green algae)	The Pacific	The Mediterranean [3,4], but is certainly present in the Atlantic because it is cited from the Canary Islands
<i>Sargassum muticum</i> (Seaweed)	Japan	Sidi Bouzid in the El Jadida region [5]
<i>Rugulopteryx okamurae</i> (Brown algae)	The western Pacific Ocean	The Belyounech region, Tangier, and Mdiq on the Mediterranean coast and in the Strait of Gibraltar [6]
<i>Spartina densiflora</i> (Herbaceous plants)	The coasts of temperate South America	The banks of a merja south of Sidi Allal ech Chrif [7]
<i>Crassostrea gigas</i> (Japanese oyster)	The Asian coasts of the Pacific Ocean	Oualidia in 1950, and Dakhla more recently from French parks

<i>Crepidula fornicata</i> (Mollusk)	The east coast of North America	Mentioned among the mollusks of Morocco without any details on its distribution [8]
<i>Bursatella leachii</i> (mollusk)	The Lessepsian migration, through the Suez Canal through ballast water	the French coasts to the far west of this sea in Morocco
<i>Artemia franciscana</i> (American brine shrimp)	America	Mar Chica, Nador [9]
<i>Etrumeus golanii</i> (<i>Clupeiformes</i> fish)	The Lessepsian migration, through the Suez Canal	The Mediterranean coast side of Morocco [10]

Table 1 : Invasive species in Morocco in marine and coastal waters [11].

The Merja Zerga, the subject of this note, is a Ramsar site and a biological reserve of international importance in terms of biodiversity and socio-economics in Morocco. The presence of *Callinectes sapidus* Rathburn, 1896 was reported for the first time on the 07.09.2021 in this site

during a diagnostic mission carried out by the national museum of natural history of the scientific institute (Figure 1) and confirms at the same time its existence in the African atlantic coast.

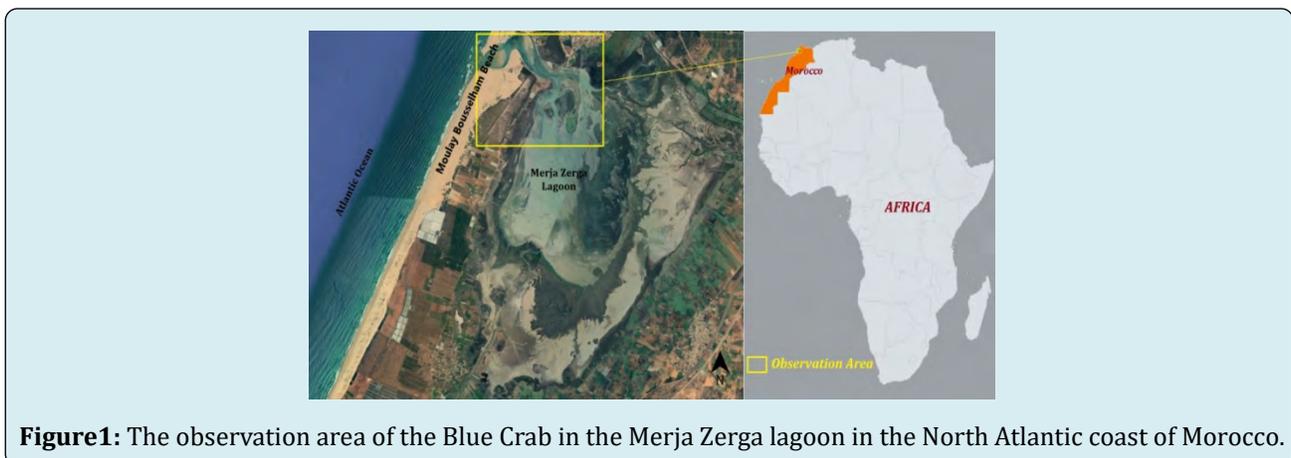


Figure1: The observation area of the Blue Crab in the Merja Zerga lagoon in the North Atlantic coast of Morocco.

This crab is a danger for the biodiversity because of its hyper aggressiveness to which nothing resists (Figure 2), it consumes everything in its path and leaves behind it

damages on the local species (crustaceans, mollusks, small fishes...) thanks to its hyper-powerful claws and its speed.



Figure 2: *Callinectes sapidus* collected in the lagoon 'Merja Zerga' on the 07.09.2021.

The impact of this species has been reported by fishermen who are sounding the alarm on the threats to the natural resources in this lagoon, which impacts the social and economic activities afterwards (destruction of the fishing

nets, the shellfish activities...) if no action is taken to combat this scourge, and informed us that its first appearance was about two years ago in 2019.

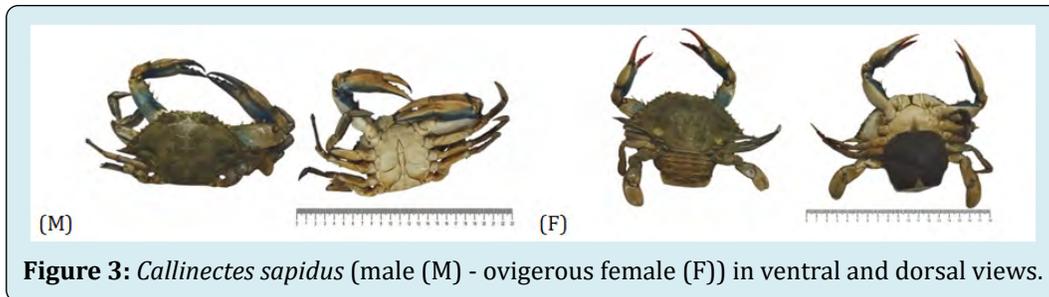


Figure 3: *Callinectes sapidus* (male (M) - ovigerous female (F)) in ventral and dorsal views.

Captured individuals (ovigerous female, male) were measured, weighed, photographed and preserved (Figure 3), in order to enrich the reference collection of the natural history museum of the scientific institute and for the study of this non-native species by our researchers later.

Conclusion

Impact studies should be conducted on the biology and population dynamics of *Callinectes sapidus* in this lagoon and its dispersal potential. This will allow us to determine its impact on the ecosystem and to define a management strategy that reconciles the exploitation or possible eradication of this resource with the preservation of existing species, and it is recommended that the country takes into consideration urgently this problem which gradually destroys this biological reserve.

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